

# AMERICAN Railroad Journal.

ESTABLISHED 1831.

Steam Navigation, Commerce, Finance, Machinery, Mining, Manufactures, New Inventions.

SECOND QUARTO SERIES.—VOL. XXXVIII., No. 50.]

NEW YORK, DECEMBER 16, 1882.

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THE editor of the RAILROAD JOURNAL is pleased to receive information of railroad enterprises already entered upon or projected, items regarding the business done on the roads, such as relate to persons employed in the railroad and kindred interests; in short, about all matters which the readers of such a paper as this are gratified to find within its columns.

## CONSTRUCTION.

THE first regular coal train to pass over the Lehigh and Hudson River Railroad since its completion was made up in the Belvidere-Delaware yard at Phillipsburg, N. J., on the 11th inst.

THE last spike was driven on the Milwaukee and Winnebago Railroad, on the 11th inst., giving the Wisconsin Central Railroad an independent outlet from Milwaukee. The first through train will be run on Monday next.

THE Richmond and Mecklenburg Railroad is now running its freight trains regularly to Chase City.

THE Lebanon and Cornwall Railroad, which is to connect Lebanon with the Pennsylvania Railroad, will be completed by the 1st of May.

A SECTION of fourteen kilometres of completed roadway, recently constructed between Monterey and Santa Caterina, on the Coahuila division of the Mexican National Railway, was examined by the official inspector on the 12th inst., and accepted on behalf of the Mexican Government. The inspector expressed satisfaction with the thoroughly substantial manner in which the road is built. Under the terms of the concession granting \$7,000 per kilometre of accepted road the company will receive immediately \$98,000. Track is already laid for sixteen kilometres south of Santa Caterina. The Company has now 284 kilometres open for traffic in northern Mexico, making a total on the northern division, from the port of Corpus Christi, Texas, to Santa Caterina, of 500 kilometres of completed road.

THE last rail on the Chicago and Atlantic Railway between Rochester and Huntington, Ind., was laid on the 9th inst. Trains are now running between Lima and Marion.

THE Shamokin, Sunbury and Lewisburg Railroad, an extension of the Philadelphia and Reading Railroad, is expected to be finished during the coming spring. This new branch will extend a distance of thirty-two miles, and

will be used in connection with the Pine Creek Railroad, which is in a forward state of construction.

GROUND was broken for the Baja, California and Sonora Railroad on the 7th inst., in the Pia Juana Valley, on the Mexican side of the line. The contract for the first section of twenty miles has been let, and grading will be pushed rapidly. The road will run through Lower California, crossing the Colorado River near its mouth, thence through to Calabazas in Arizona.

DOUBLE-TRACK has been put down on the Baltimore and Potomac Railroad, a distance of twenty-five miles. The remaining fifteen miles will be completed by next spring.

WORK on the Cleveland, Youngstown and Pittsburgh Railroad in Jefferson county, Ohio, is progressing rapidly. At Nebo, seventy hands are employed.

THE Texas and St. Louis Narrow-Gauge has only forty miles of track to lay to complete the line from Cairo to Gatesville, a distance of 750 miles.

PRIVATE advices just received from Antofagasta, contain interesting information of railroad operations. The railway from that place is a narrow-gauge line of two feet six inches. Its length at present is eighty-five miles, but in all probability it will be extended some 350 miles further, to the silver mines of Huanchaca, in the heart of Bolivia. The road has a daily traffic of 750 tons, grades up to three, and has curves of eight hundred.

THE Columbus (Ga.) *Dispatch* says that the Columbus division of the Georgia Pacific Railroad will certainly be completed to Fayette Court House by January 1, and probably by December 20.

THE surveyors on the new line of the Buffalo, Pittsburgh and Western Railroad, from Brocton to Toledo, have reached the Ohio border.

A THIRD track is being laid by the Pennsylvania Railroad Company from Cooper's Creek, Camden, to the Burlington Junction, to avoid delay caused by the increasing freight business.

THE new branch of the West Jersey Railroad from Swedesboro to Salem, via Woodstown, was formally opened on the 13th inst.

THE Salamanca division of the Buffalo, Pitts-

burgh and Western Railroad has been completed to Salamanca, where connections will probably be made with the New York, Lake Erie and Western, Rochester and Pittsburgh, and New York, Pennsylvania and Ohio railroads.

THE New York, Pittsburgh and Chicago Railway Company are about to commence work upon a line which will extend from Pittsburgh to Marion, connecting at Marion with the Chicago and Atlantic Railway, now almost completed, and under control of the New York, Lake Erie and Western Railway Company. The company also contemplates a direct line to Driftwood, Pa., and Salamanca, N. Y., thereby securing a short line with the Philadelphia and New York. Five thousand men are en route to construct the road between Wampum, Pa., and New London, Ohio.

THE Pittsburgh, Bradford and Buffalo Narrow-Gauge Railroad is ballasted to Sheffield Junction, fourteen miles north of Marionville. The bridge at Foxburg is nearly completed. This line will give a through route to Pittsburgh over the Kane City and Butler and Pittsburgh and Western roads.

## ORGANIZATION.

THE managers of the Plymouth Railroad Company, one of the leased lines of the Philadelphia and Reading Railroad Company, elected to serve for the ensuing term, are: John Boyd, I. V. Williamson, Edwin Swift, Winfield S. Wilson, John Slingluff and Christopher Heebner.

AT the annual meeting of the stockholders of the Edison Electric Illuminating Company, of New York, on the 12th inst., the following directors were elected: Norvin Green, S. B. Eaton, Thomas A. Edison, E. P. Fabri, James H. Banker, Henry Villard, R. M. Gallaway, G. P. Lowrey, J. F. De Navarro, Calvin Goddard, W. H. Meadowcroft, J. H. Wright and E. G. Fabbri.

AT the annual meeting of the stockholders of the Alleghany Central Railroad, held in this city on the 6th inst., the following gentlemen were elected directors for the coming year: D. N. Martin, F. B. Jenkins, H. A. V. Post, C. E. Kimball, C. C. Pomeroy, M. G. Post, H. L. Larned, A. J. Wellman, A. H. Mines, F. W.

Higgins, M. F. Blair, Frank Smith and George D. Chapman. The following officers were also elected: Frank Smith, president; D. N. Martin, vice-president, and Charles E. Kimball, treasurer and secretary.

At the annual meeting of the stockholders of the Connecticut Valley Railroad Company, held at Hartford on the 12th inst., the following directors were elected: Samuel Babcock, of Middletown; George H. Watrous and E. H. Trowbridge, of New Haven; Richard D. Hubbard, H. C. Robinson and C. M. Pond, of Hartford; William D. Bishop and Nathaniel Wheeler, of Bridgeport; and D. C. Spencer, of Saybrook. The directors are the same as agreed upon when the road was leased to the New York, New Haven and Hartford Railroad Company.

### INCORPORATION.

THE National Steamship Construction Company of New York was incorporated on the 11th inst., with a capital of \$2,000,000. The officers are Waldo Adams, of Boston, president; William B. Dinsmore, Jr., of New York, vice-president; Samuel Little, Irving A. Evans and Waldo Adams, of Boston, and Edward P. Kennard and George H. Houghton, of New York, executive committee of directors. The company has been organized under the laws of this State for the purpose of constructing and repairing steam and sailing craft, and of building the dome-covered steamers under the patents of the American Quick Transit Steamship Company. It has purchased twenty-seven acres on the water-front of Bay Ridge for piers, dry-docks, basins, marine, railways, etc.

THE Collinwood Belt Railway Company, Cuyahoga county, Ohio, was incorporated on the 7th inst. Capital \$200,000.

### PERSONAL.

J. F. GODDARD, for years general freight agent of the Atchison, Topeka and Santa Fé, has been promoted to the position of general traffic manager of the same road.

EX-MAYOR JAMES HOWELL, of Brooklyn, has been appointed a trustee of the New York and Brooklyn Bridge, to fill the vacancy occasioned by the death of Henry C. Murphy.

GEORGE S. GRISCOM, late general manager of the Chicago and Western Indiana Railroad, has been appointed general superintendent of the Cincinnati, Hamilton and Dayton Railroad.

THE officers of the Buffalo and Southwestern Railroad Company, elected on the 12th inst., are: President, John F. Moulton, vice-president, James Adams; secretary and treasurer, Wilson S. Bissell.

MR. ALLPORT, of London, has declined the post of fifth voting trustee of the New York, Pennsylvania and Ohio Railroad, on the ground that he considers the policy of the trustees radically different from the policy of himself and Mr. Swarbrick.

At a meeting of the directors of the Washington and Western Railroad Company, in this

city on the 8th inst., Edward Quintard, of New York, formerly vice-president of the Delaware, Lackawanna and Western Railroad, was chosen president in place of W. J. Best.

THE directors of the Albion, Carmi and Shawneetown Railway Company of Illinois, have elected the following officers: C. E. McDowell, Carmi, president; Charles Churchill, Albion, first vice-president; William Inman, New Haven, second vice-president; J. D. Richerson, Shawneetown, treasurer; C. P. Berry, Carmi, secretary.

### Troy and Greenfield Railroad and Hoosac Tunnel.

THE following report of the manager as made to the Massachusetts Railroad Commissioners exhibits the operations of the Troy and Greenfield Railroad and Hoosac Tunnel for the year ending Sept. 30, 1882, in comparison with the previous year of 1881:—

	1882.	1881.
Miles operated.....	44	43½
Double track.....	24	7
Sidings.....	27	22
Total.....	95	72½
Total income.....	\$236,149	\$245,457
Total expenses.....	171,065	183,296
Net earnings.....	\$65,084	\$62,161
New construction for year.....	\$275,359	\$345,584
Total train mileage.....	599,691	571,630
Number local passengers.....	148,359	132,706
Number through passengers.....	79,791	47,744
Total number passengers.....	228,150	180,450
Total passenger mileage.....	5,221,490	3,638,782
Tons local freight.....	223,579	168,946
Tons through freight.....	819,471	759,602
Tons free freight.....	10,459	6,088
Total freight tons.....	1,053,509	934,030
Total freight mileage.....	32,641,889	36,057,193

From the above statement it will be seen that, while there has been a gratifying increase in the development of traffic over the State's railroad, both for passengers and freight, the net returns are not commensurate with the increase of business. This condition of affairs is easily enough accounted for, if it is remembered that for nine months of the year the through business, the principal traffic of the road, was carried at ruinous rates, so far as the railroads themselves were concerned.

At the present time rates are good, and the traffic over the road is limited only by the ability of the immediate western connections of the Tunnel to handle it. More business is offering in the West than the lines between the Tunnel and Hudson River can now take care of, while the Fitchburg Railroad is in a condition to handle a much larger traffic from the Tunnel than it is now getting. That portion of the manager's report which deals with the arbitrations of the Railroad Commissioners with the previous year's business makes sad havoc with the net earnings of 1881, and we fear that no more favorable showing will be made upon the last year's operations, when the toll rate for that year shall have been arbitrated upon, as it will be within a short time.

Under the seven years' contract between the Commonwealth and the several roads running upon the State railway it is provided that the operating railways shall reserve fifty per cent of the gross earnings, paying over to the manager the other half. This percentage, however, is subject to arbitration before the Railroad

Commissioners, should either party to the contract demand it. The railroads demanded an arbitration upon the business of 1881, with the result that the Commissioners awarded them 5.58 additional to the 50 per cent reserved by them, leaving the State 44.32 per cent of the gross earnings of the operating roads collected upon the State's forty-four miles. Consequently we find that the manager has paid back, out of the net earnings of 1881, to the Fitchburg Railroad for this arbitration, switching, fuel, etc., \$55,058; the Troy and Boston, \$2,709.12; Boston, Hoosac Tunnel and Western, \$1,829.52; New Haven and Northampton Railroad, \$213.18—making the total sum paid to these four operating roads, \$59,810.65. This, of course, takes almost the entire net earnings of 1881, which, as appears above, were only \$62,161, leaving net only \$2,350 for that year.

### The Pacific Railroads.

THE annual report of W. H. Armstrong, Government Commissioner of Railroads, for the fiscal year ending June 30, 1882, has just been completed. The Commissioner says:—

As a rule the accounts of the roads are kept in a thoroughly comprehensive and business-like manner. Properly authorized members of the bureau, in conformity with the law, have made extensive trips this year to inspect the vast properties of the numerous bonded and land grant railroads coming within its jurisdiction. A decidedly healthy improvement in construction, operation and business has been manifest. Steel rails are being substituted for iron as rapidly as practicable; more ties to the mile and of superior quality, better fastenings and good ballast, are being used. Bridges and buildings are not only being repaired and renewed, but generally improved or replaced by better ones. Embankments and cuts are being widened, grades and curvatures reduced and general improvements made as far as practicable. The best pattern, as to service, of locomotives is being used, and improved passenger and freight cars purchased or built. Where the financial condition of the companies admits of it, new machinery of the most improved kind is being obtained; shops, round-houses, station buildings, section and tool houses are being constructed of a much improved and superior character.

The unprecedented construction of railroads during the present year deserves very thoughtful consideration. The Pacific companies are rapidly extending their lines, some through sections of country which are and will remain for years to come of little value, but which extensions are for the most part necessary to secure the trade of rapidly developing sections or to make through connections with important distributing points, which will ultimately be of great value to the main lines.

#### ACCOUNTS OF THE RAILROADS.

The amount of money applicable to repayment of interest "five per cent of net earnings" and sinking fund requirements derived from transportation receipts is \$16,804,044.

The total cash payments to December 31, 1881, which have been required from the companies, in addition to the retention of the entire compensation for services, are as follows:—

Central Pacific.....	\$1,282,264
Central Branch Union Pacific.....	1,953
Union Pacific.....	901,837

Total..... \$2,186,055

The Central Pacific Railroad Company has deposited the above amount of \$1,282,264 in the Treasury, but the balance of \$901,837 due from the Union Pacific, which owns and operates the Kansas Pacific Railway as one of its divisions, has not been finally adjusted, owing



to items for new construction and new equipment being in dispute.

A table in the report relating to mileage shows that the average number of miles traveled per passenger on the Union Pacific Railroad in 1881 was 511, at a cost of 3.27 cents per mile; on the Central Pacific the average mileage per passenger was 30, at a cost of 3.07 cents per mile.

#### INDEBTEDNESS.

The total indebtedness of the subsidized Pacific railroads to the United States on June 30, 1882, was as follows:—

Union Pacific:—	
Principal.....	\$33,539,512
Accrued interest.....	30,080,938
	\$63,620,510
Central Pacific:—	
Principal.....	\$27,855,680
Accrued interest.....	24,285,133
	\$52,140,813
Sioux City and Pacific:—	
Principal.....	\$1,628,320
Accrued interest.....	1,415,447
	\$3,043,767
Central Branch Union Pacific:—	
Principal.....	\$1,600,000
Accrued interest.....	1,501,808
	\$3,101,808
Total.....	\$121,906,900
Total credit transportation services performed and money paid into the Treasury:—	
Union Pacific.....	\$12,360,603
Central Pacific.....	6,004,665
Sioux City and Pacific.....	95,278
Central Branch Union Pacific.....	131,566
Total.....	\$18,592,113
Balance in favor of the United States, but not due until maturity of the principal, 1895, 1899, \$103,314,786.	

#### SINKING FUND ACCOUNTS.

In treating of the subject of sinking fund accounts (which amounted on June 30 last to \$2,716,221), the Commissioners says that it was not foreseen at the date of passage of the act that the premium on United States bonds would rise to the degree that it has, nor were the late conversions of bonds expected. The last investment was made April 6, 1881, at a premium as high as thirty-five per cent, and on June 30 last there remained uninvested \$935,328, which amount has since been largely increased. The fund has evidently not accomplished the result anticipated, and since April, 1881, may be regarded as having practically failed for want of suitable investment. In view of the low rate of interest returned from the investments made by the Secretary of the Treasury, the Commissioner says:—

I deem it my duty to recommend that section 3 of the act of May 7, 1878, be so amended as to authorize the Secretary of the Treasury to invest the sinking funds in the first mortgage bonds of the companies, or such bonds as have been issued to them by the United States, or in other good and sufficient securities, and to convert the bonds now held by the Treasurer of the United States in said sinking funds into money at the market rates and reinvest the same in like securities. As many doubts have been expressed as to the ability of the companies to meet their indebtedness at maturity, and as to the efficiency of the provisions for a sinking fund, I deem it proper to suggest whether it may not be practicable and highly desirable, with the consent of the companies, to change the form of their indebtedness from a running book account into a settlement and actual delivery of interest bearing bonds for the amount found to be due on a convenient day, say July 1, 1883, at which time one-half of the interest will have been paid by the United States. Let the ascertained amount be divided into, say one hundred semi-annual instalments, each to be represented by a redemption bond, one payable each six months, together with in-

terest upon the whole unpaid remainder of the debt, the lien to remain as it is.

The proposition is strongly supported by an elaborate argument, in the course of which it is stated that an approximation of the results of the present sinking fund method shows that at the maturity of the bonds the balance due the United States by the Central Pacific and Union Pacific railways would be \$45,995,904 and \$25,261,233 respectively. The Commissioner says:—

It is manifest that when the bonds mature at the close of the present century the present sinking fund will not be sufficient to meet them, and if left to be dealt with then as a mere book account, with the risk of possible diminution of income from the rapidly increasing competition which they must surely encounter, adjustment may then be more difficult and embarrassing than now.

It is respectfully submitted that it is worthy of careful consideration whether it would not be wisest and best for Congress now to commute the present mode of payment into one of fixed amount not dependent upon the fluctuations of net earnings or the contingencies of competition, which might cause net earnings to disappear.

With a view to devise the best possible security for the advance made by the government I have ventured to make the suggestion—

First—That if the sinking fund is to be continued the discretion of the Secretary of the Treasury should be enlarged as to the investments of the fund.

Second—That Congress consider the practicability of commuting the present book account indebtedness for securities having the same lien and of fixed amount and payable at fixed periods.

#### RAILROAD RATES.

Upon the topic of railroad rates, which is treated at length, the report says:—

The adjustment of railroad rates is one of the most difficult and delicate questions of modern times, and is specially complicated in the United States, where every trunk line runs through several States, each independent within its own jurisdiction and jealous of all interference by the general government. The enormous extent of this interest and the rapidity of its growth, both in the increase of mileage and tonnage, demand that its relations to the public shall be under some judicious legal control. What it shall be and to what extent are questions upon which the most experienced experts differ, and as to which there is much popular misapprehension.

It is estimated by Mr. Henry V. Poor that there are now in the United States not less than 104,813 miles of railroad, which, at the low estimate of \$25,000 per mile, have cost over \$2,600,000,000. They have transported within the last year 350,000,000 tons, of an estimated value of \$12,000,000,000. Their gross receipts were \$725,325,119. They paid for wages and material \$449,565,071; for interest on funded debts, \$128,887,002; for dividends, \$93,344,200. They employed in operating the roads 1,200,000 persons, besides 400,000 in construction, or a total of 1,600,000 employes, or about 1 32 part of our population, estimated at 53,200,000. Interests so vast and so necessarily and vitally bound up in the prosperity of the people can only be dealt with with the utmost caution and upon the fullest information. Rates and discriminations are not entirely within the arbitrary determination of railroad companies. They are subject to competitions which they cannot control, upon the ocean, upon the lakes and upon the rivers. The great lakes and rivers, so peculiarly advantageously located as to trade, with their numerous, far reaching and widely extended navigable tributaries, carry water competition into almost every portion of the country, with the effect of so reducing the general rates that the United States enjoys the cheapest railroad transportation in the world.

As yet no just basis of general application for the adjustment of rates and discriminations has been found, and it is undeniable that there are hardships neither few nor small arising from existing discriminations, often arbitrarily imposed, which affect disastrously local trade at non-competing points. There is a growing and clamorous demand among the people that railroad management shall be subjected to the restraints of law; nor is railroad management adverse to reasonable control. On the contrary, as I believe, judicious law would be most acceptable. It has become a necessity that "wars" of rates shall be controlled in the interests of both the people and the roads. Such "wars" for the time unsettle within their operation commercial values, affording sudden and unreasonable profits to a few and entailing heavy losses upon others.

[TO BE CONTINUED.]

#### Timber for Railroad Use.

THE moisture of the soils in the South, says the *National Car Builder*, is very destructive to woods employed as the bed for railway track, and managers have been troubled to know what is the most economical method for obviating loss resulting from this cause. Creosoting has been resorted to. Several works with large capital have been established in St. Louis for the treatment of wood by the creosote process, and in Texas the treatment has been applied along the lines as construction was pushed forward. This method, however, is considered rather too expensive. Some railway men have concluded that the ailantus and catalpa will prove to be the cheapest and most durable wood for tie and bridge timbers. One company, whose road extends chiefly over prairie lands, is having a large plantation seeded for these trees in equal proportions. Both the catalpa and ailantus are readily propagated from the seed, and bear seed pods abundantly. Another company, whose road enters Texas, is arranging to plant several hundred acres of these trees in that State. Even the Iron Mountain Company, that probably owns more heavily timbered land than any other in the country, has contracted for the cultivation of a catalpa farm near one of its stations in Missouri. On this road are catalpa ties that were laid nearly fifteen years ago and are apparently as sound as ever. It is authenticated that in southern Ohio, where one species of catalpa is indigenous, there are posts and timbers of this wood that have been in the ground a full century and yet show no signs of decay. Although the ailantus is an importation from China, still it and the catalpa seem to find in soils of Missouri, Arkansas, and Texas just what they require to thrive upon.

THE eleventh annual meeting of the National Board of Steam Navigation will be held at St. Louis, Mo., on the 18th of January, 1883, instead of December 1, 1882, as originally announced. The Executive Committee of the Board, of which General James S. Negley, of Pittsburgh, Pa., is Chairman, will present to Congress, as soon as assembled, a steamboat bill prepared by the committee. Delegations will be sent from Portland, Boston, New York, Philadelphia, Baltimore, Norfolk, all the lake ports, the Pacific, east, and ports along the western rivers. Over \$1,250,000 of steam tonnage will be represented.

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We invite railroad officers to send us notice of elec-  
tions, transfers, appointments, resignations, etc.; and  
all our readers would oblige us by furnishing for our  
columns any items of personal information, which may  
come to their knowledge, and are adapted to this de-  
partment. We aim to record all new railway enter-  
prises in the United States and Canada, and to note  
the progress of construction on all new roads and exten-  
sions; and we request all concerned in railway building  
to give us early information regarding the above, that  
our reports may be as complete as possible.

Subscribers are requested to report to our office any  
irregularity in receiving the JOURNAL.

Contributed articles relating to Railroad matters gen-  
erally, Mining interests, Banking and Financial items,  
Agricultural development, and Manufacturing news, by  
those who are familiar with these subjects, are especial-  
ly desired.

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New York, Saturday, December 16, 1882.

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COPIES of this JOURNAL are occasionally dis-  
tributed as an advertisement, and should not  
be returned to the office. The proper use for  
them is their thorough examination, which will  
result in business to the publishers.

## A RETROSPECT.

THE AMERICAN RAILROAD JOURNAL was the  
beginning of railroad literature. As such  
it started with ways of its own, as a matter of  
necessity. Owing nothing to precedent, ex-  
ample or experience of others, its contents  
were of such a character and put into such  
form as seemed to its promoters best for the  
purpose of informing the public upon the de-  
velopments of that means of distribution  
which may be said, without exaggeration, to  
have revolutionized the manner of life of the  
people. The differences between now and  
previously to the year 1831, when this paper  
made its bow to the public, are owing more to  
the use of the steam locomotive than to any  
other cause. With a sagacity to which all  
honor should be rendered, the more especially  
as those who displayed it have all passed  
away, the originators of the JOURNAL not  
only apprehended the vast importance of the  
industry they represented, but adopted such  
plans of making its operations known as are  
still found to be the best to follow. The re-  
semblances between the first issue and that of  
to-day are more striking than the differences.  
Compared with the present, the interests faith-  
fully and intelligently recorded by the chroni-  
clers whom we succeed, are as the giant child  
to the giant full-grown; but the portrait of the  
young monster is a good likeness. The line-  
ments, parts, and proportions are as exactly  
given as conscientious care, industry, compe-  
tent scholarship, and what somebody happily  
calls "the journalistic instinct," enabled them  
to be; and while we do our best, we should be  
rash as well as immodest to claim that our  
portrayal of the huge subject we treat is, the  
improved conditions under which we work be-  
ing taken into account, superior to that of the  
pioneers in railroad journalism who so worthi-  
ly founded this newspaper, and who laid out  
methods which long experience teaches us are  
the best to continue.

Brevity as well as completeness have always  
characterized the contents of this paper. Its  
statements of financial returns, particularly, are  
and have been so compactly given—the result  
of persistent and heavy labor—that the neces-  
sity of the reader's troublesome use of reports,  
of which they present the essential parts in a  
brief and convenient form, is avoided. That  
men of business should set a high value upon  
these compilations is, therefore, a perfectly

natural thing, as much so as that competitive  
journals should follow or imitate them.

## National Exposition of Railway Appli- ances.

OFFICE OF THE COMMISSIONERS,  
GRAND PACIFIC HOTEL,  
CHICAGO, ILLS., Dec. 4, 1882.

ALMOST a year ago the feasibility of organiz-  
ing and conducting a national exposition of  
railway appliances at some favorable point in  
the United States and in the near future began  
to be discussed by prominent parties deeply in-  
terested in the growth and prosperity of this  
interest. A very thorough expression of the  
sentiment of railway men and inventors and  
manufacturers of and dealers in railway appli-  
ances has during this period been obtained; the  
universal tone of which has been entusiastical-  
ly in favor of the proposition.

Accepting this as a safe indication that an  
exposition can be organized which will reflect  
credit upon and result in great good to the  
railway and manufacturing interests of this  
country and of the world, and believing that  
the magnitude of these interests and their won-  
derful growth in the past few years make the  
present a most auspicious time in which to ac-  
complish this, a board of commissioners, whose  
names are attached to this circular, has been  
organized to arrange for and conduct such an  
exposition.

The Inter-state Exposition buildings, located  
near the business center of the city of Chicago,  
on the shore of Lake Michigan and convenient  
to the depots of the various railways, have been  
secured. These are the largest exposition build-  
ings in this country and are especially adapted  
to the purpose in question. The main building  
is 800 feet long and 200 wide, has a capacious  
gallery one-third of a mile in length, and is  
provided with an abundance of steam power  
for operating machinery. Railway tracks will  
be laid the entire length of this building, for  
the accommodation of cars and locomotives  
and for use in making tests, which will be con-  
nected with the tracks of the Baltimore and  
Ohio, Illinois Central, and Michigan Central  
roads, running within a few feet of its eastern  
wall.

Most favorable rates will be given by the rail-  
ways of the country for the transportation of  
articles intended for exhibition and excursion  
parties desiring to attend.

A series of scientific and practical tests, to  
be made by well-known scientists and carefully  
selected committees, extending to every article  
and every description of material susceptible  
of reliable test, will constitute one of the most  
interesting as well as most valuable features of  
the exposition. An official record of these  
tests and of every exhibit, including a list of  
prizes awarded, will be made and published  
under direction of the commissioners.

Exhibitors will be required to pay a reason-  
able fee for themselves and for employes in  
charge of exhibits, and an extra sum for each  
class in which they may desire to compete for  
a prize (the amounts to be hereafter fixed, to  
defray the expense of conducting tests and ex-  
aminations and of providing medals.



Every dollar of the proceeds of the exposition, after defraying necessary expenses, will be devoted to benevolent purposes connected with the railway service, to be hereafter designated by the commissioners.

A large guarantee fund has been raised in Chicago, sufficient to insure beyond peradventure the financial stability of the exposition.

No officer or commissioner will receive any salary or compensation for his services as such, the good of the great interests named and of the army of employes connected with them being the only incentive to the labor which he shall perform.

The exposition will open on or about Thursday, May 31, and close on or about July 7, 1883; and the time for preparation being thus limited it is important that all who intend making exhibits shall begin necessary preparations at once.

It is requested that each person or firm receiving this circular (No. 1) will, at the earliest possible moment, indicate, as nearly as may be, his or their intentions with reference to being represented at this exposition, the probable extent and character of the exhibit, the least amount of space that could be used to properly present it, and the greatest amount that could be advantageously used provided it could be had. As soon as these replies have been received a diagram of the Exposition buildings, showing amount and character of space to be assigned will be sent to all parties desiring to exhibit, together with necessary blanks on which to make application.

An admission fee will be charged visitors, thus relieving exhibitors of the necessity of providing for the expenses of the exposition.

It is believed that an exhibit can be organized which, in its benefits to the more intelligent masses, and especially to officers and employes in the railway service, and all who are interested in the manufacture of railway appliances, and as a contribution to the world's store of technical and practical knowledge, has never been equaled.

To this end it is earnestly hoped that every one who is directly or indirectly interested in supplying railways either with material or manufactured articles will interest himself in this matter, and that every deserving article properly coming under the head of "railway appliances" may be creditably represented at this exposition.

All correspondence should be addressed to the secretary.

#### COMMISSIONERS.

Lucius Fairchild, ex-governor of Wisconsin and late minister to Madrid, Spain.

George M. Pullman, president Pullman's Palace Car Company, Chicago.

Aaron French, Pittsburgh Car Spring Company, Pittsburgh.

J. McGregor Adams, Adams & Westlake Manufacturing Company, etc., Chicago.

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#### RAILROAD MEDICAL SERVICE.

[Continuation of the French System.]

BY S. S. HERRICK, M. D.

SECRETARY OF BOARD OF HEALTH, STATE OF LOUISIANA.

#### PRINTED INSTRUCTIONS TO EMPLOYÉS.

THE Paris, Lyons and Mediterranean Railway has issued, for general circulation, simple, precise and minute rules applying to those engaged in every grade of service. These relate: 1. To the principal hygienic precautions which should be observed by individuals to avert preventable diseases and accidents; 2. To the chief measures which are to be used on the spot and while waiting for the doctor, in case of the most common accidents and maladies; 3. To the mode of employing the contents of the relief-chests, and of the medicine chests at the station-houses, especially those which are in daily use or can be obtained without a physician's prescription. It is understood, however, that these instructions are not intended to dispense with the attendance of a physician, but to be followed in an emergency or until a medical man can be on the spot.

There is no question that the hygienic counsels have much greater weight with Frenchmen than they would have with the average American, who would rather have his own way and take the chances than be bothered by a set of

rules, however much they might conduce to health and comfort. It is to be noted that some of the instructions for first aid to the sick and wounded, while waiting for the doctor, are antiquated, and would not now be approved in the light of to-day's experience. On the whole, however, they are greatly to be commended, and doubtless they might, with some modifications, be found applicable to a similarly organized medical service in this country.

#### THE EASTERN RAILWAY OF FRANCE.

The medical regulations upon this road are so similar to those already described that only the different features need be noted. Express mention is made of arrangements entered into with the managers of local hospitals along the lines, for the reception and attendance of sick and wounded men.

Two kinds of sick-tickets are issued: 1. To those whose sickness or injury grew directly out of the performance of duty. These tickets are marked "Service." 2. To those whose sickness or injury is not due to performance of duty, and their tickets are marked "Outside of duty." The former are entitled, without reserve, to medical attendance, medicines and all necessary appliances for three months (in case the disability last so long); the latter have no such privilege, unless they be subscribers to the Provident Fund. Orders for medicines, etc. on this account bear the inscription "Provident Fund," and are on pink paper. (As no allusion is made to a Provident Fund in the regulations of the other railroad companies, it is to be presumed that they have not adopted this feature.)

All trains on the Eastern Railway are provided with relief-chests, containing medicines and surgical appliances for use in case of accidental injuries to any persons traveling thereon.

Sick employes continue to receive full pay during illness not exceeding eight days; from this time up to two months of disability for work they are allowed half pay. Beyond two months the allowance is at the discretion of the administration. In case of death, the company grants to the widow or orphans a sum equal to two months' pay, and assumes the expense of burial. In special cases further pecuniary relief to the family may be granted by the administration.

The above allowances by the company are made only to permanent employes. Day laborers are entitled to medical attendance and medicines, together with half pay, during two weeks of disability. In case the disability arose strictly in the line of duty, the relief may be extended at the discretion of the management.

#### A PROVIDENT FUND

has been organized upon the Eastern Railway, for the purpose of supplementing the relief granted to employes in case of sickness or injury, or to their families in case of death. Its benefits accrue only to the contributors, and they receive half pay for two months after the company's allowance has expired by limitation. In case of death, the burial expenses are defrayed by the Provident Fund, when not borne by the railroad company. In addition the family receive from the fund a sum equal to that allowed by the company.

In case of permanent disability, besides allowances already mentioned the invalid will recover all sums previously contributed by him to this relief fund, otherwise the relief is limited to one year's contributions.

When it appears that the disability has arisen from intemperance, venereal disease or brawls, relief from this fund can be refused. When employes leave the company's service, whether by resignation or dismissal, they have no claim for reimbursement of contributions made to the fund.

In case the Provident Fund proves insufficient to meet all demands, the administration of the company advance the needed sum, and provide for its repayment by an increased assessment upon the contributors. The accounts of this fund are balanced annually. Any surplus goes to the Pension Fund; provided that the capital of the Provident Fund must not be allowed to fall below its standard of January 1, 1862. The investment of its disposable funds must be made in obligations of the company or in Government securities.

[TO BE CONTINUED].

#### The "Tramway" Association.

At the meeting of the Tramway presidents and superintendents in Boston, on the 13th inst., the committee appointed to present a constitution and by-laws reported a draft, which was adopted, stating that the objects of the association were to cultivate a spirit of fraternity among those connected with street railroad management and to promote progress and improvement in the methods of operation. The name chosen is the Street Railway Association of America.

The following officers were nominated for the ensuing year: President, H. H. Littell, of Louisville; vice-presidents, W. H. Hazard, of Brooklyn, Calvin A. Richards, of Boston, and B. F. Klover, Cincinnati; secretary and treasurer, J. W. Richardson, of Brooklyn; executive committee, Julius Walsh, of St. Louis; Charles Clementshaw, of Troy; Thomas Lowery, of Minneapolis; and J. R. Lake, of Chicago.

THE branch railroad built by the St. Louis and San Francisco Railroad to the famous invalid resort, Eureka Springs, Arkansas, has proved very remunerative as well as a very great blessing to invalid travelers. It is now in running order almost the entire length, which is much more convenient than the tiresome stage-coach route, attended as it was with so many dangers in this wild, mountain country and so much fatigue to the health seeker. This road renders these wonderful springs accessible to all—no matter how great their infirmity.

In noticing the perfection of any modern invention did any orator ever omit to state that it is yet in its infancy? The Esterbrook Steel Pen, however, is no infant, having been introduced twenty-two years ago, and you cannot go anywhere without finding it.

BOWERS, DURÉ & Co., of Wilmington, Del., shipped seven cars to the Manhattan Elevated Railway of New York, on the 9th inst.

#### Journal of Railroad Law.

SUPREME COURT OF PENNSYLVANIA.

##### THE NORTHERN CENTRAL RAILROAD COMPANY vs. HUSSON.

Negligence—Suit for death of brakeman when coupling railroad cars, whose loading projected over the bumpers—One of the risks assumed when engaging in the business—Contributory negligence.

The question of extraordinary risk to the deceased on the part of the defendant and ordinary care by the deceased does not arise merely because the injury in a particular case might possibly have been prevented by some different service. If the risk is an ordinary one the employer is not liable, even if the employee did use ordinary care.

The risk which occasioned the injury in this case was not of an unusual and extraordinary character, but was one ordinarily incident to the employment in which the deceased was engaged, and hence there was no liability in defendant. The fact that the cars were loaded beyond the bumpers was a very usual occurrence, and cars thus loaded could be successfully and safely coupled. It was the duty of the plaintiff to show that the loading of the cars complained of was an unusual occurrence which created an extraordinary risk; and upon his failure to do so, a direction to find for the defendant should have been given.

Error to the Court of Common Pleas of York county.

This was an action on the case brought by Lizzie Husson, widow of John Husson, deceased, against the Northern Central Railway Co., to recover damages for the death of the said John Husson, occasioned by the negligence of the defendant.

John Husson, the deceased, was one of the hands employed on a gravel train on the Northern Central Railway, and while in the act of coupling cars, his head was caught and crushed between the loading of the two cars, which consisted of bridge irons projecting over the ends of each car. The cars had arrived in York on the 12th and 13th days of July, 1880, two cars on each said days, and were being shifted together by the aid of a locomotive on the morning of the 14th, in order to be taken by the gravel train, on which the deceased was employed, to their destination. The two sets of cars were more than fifty yards apart when the engine commenced moving them together. The deceased was on the south side of the track. At first he was by the cars not connected with the locomotive, standing still; then he walked up and met the cars coming, and walked back with them and took hold of the coupling. He walked ahead of the cars that were moving to get the pin ready to make the coupling. As the cars came together he stooped down with one foot on the rail, and reached with his left hand for the link, and entered it to make the coupling. He had the pin set up standing so it would drop in.

Ten minutes after the accident, and the deceased was killed, the cars were coupled together again without accident. They were Pennsylvania Railroad gondola cars, brought by the defendant from Marysville, where they had been brought from Pittsburgh by the Pennsylvania Railroad, and from Marysville had been brought on the Northern Central Railway to York. They had passed the regular routine of inspection. The two sets of two cars each came to Marysville separately; that is, in separate trains, and came to York in separate trains, and the two sets of cars had

not been coupled together anywhere along the route; but when they came to York, it was necessary to couple the four cars together. According to the testimony, the entire height, from the ground or cross ties to the loading on the cars, was four feet four and a half inches. The deceased was a tall, slender man, and, in stooping, his head would be probably higher than the average of men. He completed the coupling, and it was in getting away his head was caught. When the cars were coupled, the loading came so close together that unless the coupler stooped entirely under the car, they could not be coupled without accident.

Conductors and employes of the defendant testified that instructions were given to the men how to couple cars, and illustrations were given of the manner of doing it, by stooping or crouching down and reaching under the deadwood, and taking hold of the link and entering it, the pin having been previously fixed so that the jar of the cars meeting would cause it to drop into its place.

It was also in evidence that these instructions were given with regard to the construction of the cars and danger of injury to head and arm, and not to avoid projecting loads. A large number of the employes or former employes of the company, testified that cars with projecting loads frequently pass over the road, and are handled and coupled together with safety. That such cars may be coupled with safety, and that, in their opinion, cars loaded as these were with bridge irons, with the limited space of five inches between them, could be coupled with safety by the exercise of ordinary care and judgment.

The verdict was for the plaintiff for \$4,500, and a writ of error was taken.

Opinion by GREEN, J. October 5, 1882.

The chief difficulty we encounter in this case, is in discovering any evidence of negligence on the part of the defendant, such as would subject it to liability for the injury in question. The deceased, John Husson, was an employe of the defendant, whose duty it was, amongst other things, to couple cars at the time and place of the accident. While in the performance of his duty, his head was caught between the projecting ends of certain bridge irons, loaded upon the cars he was coupling, in consequence of which he was killed. It is not claimed that there was any defect in the road-bed or in the cars, or in the coupling apparatus. The injury was not the result of any defect in any of the appliances furnished by the defendant; on the contrary, it was the result of the manner in which the act of coupling was performed. The same cars, with the same loading upon them, were, immediately after the accident, successfully coupled by another person in perfect safety. The only difference in the two acts of coupling was in the manner in which they were respectively done. Husson's head was raised high enough to be caught by material loaded on top of the cars, and Gaul, who made the second coupling, kept his head below the material, and was not caught. Husson's head was above the level of the floor of the car or it would not have been caught. The act of coupling was necessarily to be performed below the bottom of the cars, as the apparatus by which it was to be done was there located. It was testified by a number of witnesses, and contradicted by none, that, in



order to make the coupling properly and with safety, the head of the coupler must be below the car. Common prudence would seem to indicate the necessity of such a precaution, and the mere fact and character of the accident would appear to demonstrate that it was due to a want of ordinary care by the deceased. But however that may be, we are unable to discover anywhere in the testimony the slightest evidence of negligence on the part of the defendant. The case was left to the jury by the learned judge of the court below on the question of extraordinary risk to the deceased on the part of defendant, and ordinary care by the deceased. Thus in the charge the court said: "If you believe that the deceased was, under the circumstances of this case, subjected to such extraordinary risk which the company could have avoided, the company is liable. But if you believe it was an ordinary risk, and that the deceased did not take ordinary care, in other words, was careless in the performance of the act which resulted in his death, the company is not liable." We cannot agree that the risk to which an employer subjects his employé suffices to impose liability upon the former, as being extraordinary in character, merely because the injury in a particular case might possibly have been prevented by some different device. Almost all accidents could be avoided if the special manner of their occurrence could be foreseen. Nor can we assent to the idea that it requires a combination of ordinary risks on the part of the employer, and want of ordinary care on the part of the employé, to relieve the employer from liability. If the risk is an ordinary one, the employer is not liable, even if the employé did use ordinary care. In all such cases, the risk of injury is one of the hazards which the employé assumes when he engages in the service to which it is incident. This has always been the law. There can be no doubt that the coupling of railway cars is a hazardous business, and requires the exercise of a commensurate degree of care on the part of those who engage in it. But it by no means follows that, because of an accident to such an employé while performing his duty, the employer is liable simply for the reason that the particular accident might have been prevented by some special device or precaution not in common use. There was no evidence that the method of loading the cars in question was an unusual occurrence, and no proof that the risk resulting therefrom was an extraordinary risk. It is manifestly apparent from the entire body of the testimony that the risk under consideration was one of the ordinary risks of the business in which the deceased was engaged, and hence there was no liability for an injury resulting from it.

In *Patterson v. Pittsburgh and Connellsville R. R. Co.*, 26 P. F. S., we said on page 393: "It is true the master is not responsible for accidents occurring to his servant from the ordinary risks and dangers which are incident to the business in which he is engaged; for, in such case, the contract is presumed to be made with reference to such risks." The same doctrine was repeated in *Pittsburgh and Connellsville R. R. Co. v. Sentmeyer*, 11 Norr. 270; and in *Baker v. Allegheny Valley R. R.* 38 Legal Intell. Sharswood, C. J., on page 240 said: "A servant assumes all the ordinary risks of his employment. He cannot hold the master responsible for an injury which cannot be traced directly to his negligence." The case of *Day v. Toledo, Canada Southern and Detroit Railway Co.*, 42 Mich. Rep. 523, is quite similar to the present. Day sued the company for injuries received in having his fingers caught in coupling cars on a train of which he was brakeman. A car loaded with lumber was to be attached to the train. It was claimed that the lumber projected forward more than usual, and that plaintiff's fingers were caught in the coupling link and hurt. The court took the case from the jury, saying: "The injury was from one of the risks incident to the occupation of plaintiff, and he knew better than the conductor or any one else the precise difficulty to be guarded

against." In the case of *Atchison, Topeka and Santa Fé R. R. Co. v. Plunkett*, decided by the Supreme Court of Kansas, and reported in 2 Amer. and Eng. Railway Cases, 128, the circumstances were still more analogous. The cars in that case were loaded with material which projected beyond the ends of the cars. The person attempting to couple them was caught between the ends of the loading and killed. The action was brought against the company for negligence in causing the death of the decedent. It was held that it was not negligence for the company to receive and handle cars so loaded, nor to order or permit an employé to attempt to couple them. Upon the whole case, we think the jury should have been directed to render a verdict for the defendant. Judgment reversed.

### Railroads in Iowa.

THE total number of miles of railroad in Iowa, as reported to the Board of Railroad Commissioners by the various companies, is 18,548.64. The Commissioners' estimate of the stock of these roads representing the parts of them in Iowa, added to the stock of the roads entirely in Iowa, amounted to \$121,160,064.81, or \$19,117.54 per mile. The total debt of the roads in Iowa, as reported and estimated by the Commissioners, is \$118,057,183.16, or \$18,628.40 per mile. Of this amount \$112,637,966.05 is funded debt—\$5,419,217.11 is unfunded or floating debt. The stock and debt of the roads in Iowa amount to \$230,267.97, or \$37,745.94 per mile. The following table shows the amount of stock and the amount of debt per mile of each company, as returned by them:—

	Stock per mile.	Debt per mile.
Burlington, Cedar Rapids and Northern .....	\$8,696 20	\$15,628 55
Chicago, Burlington and Kansas City .....	.....	32,304 97
Central Iowa .....	20,236 44	19,954 79
Chicago, Burlington and Quincy Kansas City, St. Joseph and Council Bluffs .....	17,956 00	16,960 00
Chicago, Milwaukee and St. Paul .....	18,354 10	18,486 95
Chicago and Northwestern .....	8,357 00	20,061 00
Chicago, Iowa and Nebraska .....	21,325 48	34,396 94
Cedar Rapids and Missouri River .....	47,851 90	4,621 51
Des Moines and Minneapolis .....	27,809 20	13,556 22
Maple River .....	15,805 72	10,600 02
Chicago, Rock Island and Pacific .....	8,122 34	8,231 12
Keokuk and Des Moines .....	37,182 10	15,507 31
Chicago, St. Paul, Minneapolis and Omaha .....	25,431 50	16,954 50
Crooked Creek .....	29,275 49	19,508 24
Des Moines and Fort Dodge .....	8,411 76	2,835 08
Dubuque and Dakota .....	45,444 72	29,489 72
Cedar Falls and Minnesota .....	8,936 84	9,968 51
Dubuque and Sioux City .....	20,991 00	20,347 62
Iowa Falls and Sioux City .....	35,039 90	6,110 72
Minneapolis and St. Louis .....	25,170 12	16,833 57
Sioux City and Pacific .....	27,396 00	21,514 99
St. Louis, Keokuk and Northwestern .....	19,255 26	52,533 11
Wabash, St. Louis and Pacific .....	18,688 52	18,570 45
Narrow-Gauge roads—	20,054 47	30,130 20
Burlington and Northwestern .....	4,364 08	5,908 26
Des Moines, Osceola and Southern .....	5,000 00	7,000 06
Fort Madison and Northwestern .....	7,613 00	5,070 09
Cedar Rapids and Marion .....	12,000 00	.....

Thirteen roads report an excess after deducting expenses, interest and rental. This excess amounts to \$8,434,176.64. Seven roads show a deficit of \$577,487.70, leaving the net income \$7,850,688.94, which would give an average of net earnings for all the roads in the State of \$1,239.81 per mile. The cost of operating the Chicago, Burlington and Kansas City Railroad was \$17,858.88 more than its entire earnings, that of the St. Louis, Keokuk and Northwestern \$63,013.80. The Iowa Central earned 7.54 per cent on its indebtedness, the Des Moines and Fort Dodge 6.61, the Minneapolis and St. Louis 3.7, the Sioux City and Pa-

cific, 7, the Wabash, St. Louis and Pacific 3.31.

The property accounts of the roads reporting have been increased during the year \$45,575,581.89. This amount covers the addition in other States as well as Iowa. Of this amount the Commissioners estimate, as properly belonging to the roads in Iowa, an increase in property of \$20,372,206.01, or for the 911 additional miles of road reported for the year \$22,337.92 per mile.

The amount of taxes paid by the railroads in the State is \$707,660.31, which is 9 per cent of the income to the stockholders. The taxes paid in 1878 were \$594,912.65; in 1879, \$584,169.79; in 1880, \$591,843.08; in 1881, \$628,611.51. The Chicago, Rock Island and Pacific paid \$162,629.16 of this amount, the Chicago and Northwestern, \$126,378.50; Chicago, Milwaukee and St. Paul, \$94,166.23; Illinois Central, \$60,624.16.

Of the entire mileage of the State 5,182.73 miles are owned by the companies operating them and 1,154.27 are leased. The Rock Island leases 162.20 miles; the Northwestern, 486.10; Illinois Central, 402.16; Wabash, 87.90; Burlington and Northwestern, 15.91.

There are 700.73 miles of side-track reported, a trifle more than 11 per cent of the length of the roads. The Commissioners consider this amount small, and claim that it is often a source of serious embarrassment in moving trains. There are but 47.06 miles of double-track, of which the Chicago, Burlington and Quincy reports 43.06 and the Rock Island 4. There are 2,937.24 miles of steel rails and 3,024.71 miles of iron rails.

Number miles run by passenger trains....	18,575,194
Number miles run by freight trains.....	39,106,906
Number miles run by switching trains....	14,005,754
Number miles run by construction trains..	6,744,011
Total train mileage.....	78,431,865
Number passengers carried.....	26,927,126
Number passengers carried one mile.....	787,221,962
Number tons freight carried.....	31,062,765
Number tons freight carried one mile.....	4,031,564,735

The average distance traveled by each passenger is forty-five miles, indicating that little effort has yet been made to develop local travel. The passenger rates charged are generally the maximum fixed by statute.

The total freight car mileage is 591,616,101.

The rate of freight charges per ton per mile varies from 9 cents on the Crooked Creek road, 4.24 on the Burlington and Northwestern, 3.08 on the Des Moines and Fort Dodge, to 1.60 on the Milwaukee and St. Paul, 1.47 on the Northwestern, 1.24 on the Rock Island and 0.95 on the Wabash. The average rates are a little higher than last year.

The total number of locomotives is reported at 2,652; weight varying from 28 to 67 tons. Number of cars, 85,206; of these 1,031 are passenger cars, 601 baggage, mail and express, 125 parlor, sleeping and dining cars, 49,864 box freight cars, 7,846 stock cars, 18,240 platform or coal cars and 7,497 other cars.

THE Chicago Tribune says there is the best authority for the statement that the West Division Street Railway Company are seriously considering the idea of running their cars by electricity. Elmer A. Sperry, of Cortland, N. Y., is the projector of the system. It is understood that the system will, besides running cars, furnish light therefor, and will light the track for a third of a mile ahead of the car.

## THE STOCK EXCHANGES AND MONEY MARKET.

## New York Stock Exchange.

Closing Prices for the week ending Dec. 13.

	Th.7.	F.8.	Sat.9.	M.11.	Tu.12.	W.13.
Adams Express.....	135	134	134	133		
Albany and Susq...						
1st mortgage.....						
2d mortgage.....	106 1/4					
American Express.....	95	95		91	92	
Burl. C. R. & Nor...				81		
1st mortgage 5s...	100		140 1/4	100		
Canada Southern...	66 1/4	67 1/4	67 1/4	67 1/4	68 1/4	69 1/4
1st mortgage guar...	96 1/4	96 1/4	98 1/4	99 1/4	99	
Central of N. Jersey	70 1/4	70 1/4	70 1/4	70 1/4	71 1/4	72
1st mort. 1890...						
7s, consol. ass...	103 1/4		110	107 1/4		
7s, convertible ass...			108		107 1/4	
7s, Income...			82	84	85	
Adjustment.....						
Central Pacific.....	86 1/4	87 1/4	86 1/4	86 1/4	87 1/4	87 1/4
6s, gold.....						116 1/4
1st M. (San Joa)						
1st M. (Cal. & Or.)						
Land grant 6s...				104		
Chesapeake & Ohio...	23		23		23 1/4	
1st pref.....	34				35	35
2d pref.....						
1st mort., series B	87 1/4	87 1/4	87 1/4		83	
Chicago and Alton...	132	132 1/4	132 1/4	132 1/4	134	
Preferred.....						
1st mortgage.....						
Sinking Fund.....	112 1/4					
Chi., Bur. & Quincy	124 1/4	125	125 1/4	126 1/4	128	128 1/4
7s, Consol. 1903...						128 1/4
Chi., Mil. & St. Paul	100 1/4	101 1/4	102 1/4	104 1/4	106 1/4	108 1/4
Preferred.....	118 1/4	120 1/4	120 1/4	121	124	123 1/4
1st mortgage, 8s...						
2d mort., 7 3/4-10s...						
7s, gold.....						
1st M. (La. C. div.)						123
1st M. (I. & D. ext.)	122					
1st M. (H. & D. div.)	120			120		
1st M. (C. & M. div.)						
Consolidated S. F.	124 1/4			122 1/4		
Chi. & Northwestern	130 1/4	132 1/4	133 1/4	137 1/4	138 1/4	139
Preferred.....	151	152 1/4	153 1/4	156	156 1/4	156 1/4
1st mortgage.....						103
Sinking Fund 6s...						
Consolidated 7s...			134			
Consol. Gold b'ds	125	125		125		
Do. reg.....				125		
Chi., R. Isl. & Pac.	126 1/4	128	128 1/4	129 1/4	130	130 1/4
6s, 1917, C.....				127 1/4		
Clev., Col., Cin. & Ind.	75 1/4					78
1st mortgage.....						
Clev. & Pittsburg gr.	138 1/4	139			138	138 1/4
7s, Consolidated...						
4th mortgage.....						
Col., Chi. & Ind. Cent			5 1/4	5	5 1/4	5
1st mortgage.....						
2d mortgage.....						
Del. & Hud Canal...	107	107	107 1/4	108	108 1/4	109
Reg. 7s, 1891...						
Reg. 7s, 1884...						
7s, 1894.....			115	114 1/4		
Del., Lack. & Western	125 1/4	126	126 1/4	126 1/4	128	128 1/4
2d mortgage 7s...						
Consol. 1907.....				127		
Erie Railway.....						
1st mortgage.....						
2d mort. 5s, ext...		109				
3d mortgage.....						
4th mort. 5s, ext...			107 1/4			
5th mortgage.....						
7s, Consol. gold...				128		
Great West. 1st mort		106				
2d mortgage.....						
Hannibal & St. Jo...						
Preferred.....		78	76	80	80	82 1/4
8s, Convertible...						
Houston & Tex. Cen				75 1/4	76	
1st mortgage.....			111			
2d mortgage.....						
Illinois Central...	144	144	144 1/4	145	145	145
Lake Shore & Mich So	114 1/4	115 1/4	115 1/4	116	116 1/4	117 1/4
Consol. 7s...						
Consol. 7s, reg...						
2d Consolidated...						
Lsh. & W. B. con. ass				101	101	101
Long Dock bonds...						
Louisville & Nash...	51	51 1/4	51 1/4	51 1/4	52 1/4	52 1/4
7s, Consolidated...			114 1/4			
Manhattan.....	42	46 1/4	44		45	
1st pref.....		82	83 1/4			85
Met. Elevated.....	83	82 1/4				
1st mortgage.....			100 1/4			99 1/4
Michigan Central...	98 1/4	99	99 1/4	99 1/4	100 1/4	101
7s, 1902.....		121	122 1/4		123	
Morris & Essex...	125		122			122
1st mortgage.....						

2d mortgage.....	115					
7s of 1871.....				120 1/4	121	
7s, Convertible.....						
7s, Consolidated...	121			121 1/4		
N. Y. Cen. & Hud. R.	130 1/4	130 1/4	130 1/4	131 1/4	132 1/4	132 1/4
6s, S. F., 1883...						
6s, S. F., 1887...						
1st mortgage.....	134	134		133 1/4		
1st mortgage, reg...				134		
N. Y. Elevated.....						
1st mortgage.....					117	
N. Y. & Harlem...						
Preferred.....						
1st mortgage.....						
1st mortgage, reg...						
N. Y. Lake Erie & W	36 1/4	36 1/4	36 1/4	36 1/4	37 1/4	37 1/4
Preferred.....	84	85		84	85	
2d Consolidated...	96 1/4	96 1/4		96 1/4	96 1/4	97
New ad 5s fund...						
N. Y., N. Hav' n & Hart	184		184			
North Mo. 1st mort						
Northern Pacific...	44 1/4	43 1/4	42 1/4	43 1/4	44 1/4	44 1/4
Preferred.....	96 1/4	96 1/4	83 1/4	83 1/4	83 1/4	84 1/4
Ohio & Mississipp...			32 1/4			34 1/4
Preferred.....				94 1/4		
2d mortgage.....	121 1/4					
Consolidated 7s...						
Consol. S. Fund...					118	
Pacific Mail S. S. Co	35			36	39 1/4	39 1/4
Pacific R. R. of Mo.						
1st mortgage.....						
2d mortgage.....						
Panama.....						
Phila. & Reading...	51 1/4	51 1/4	51 1/4	51 1/4	52 1/4	52 1/4
Pitts. Ft. W. & Chi. gtd	134 1/4					135
1st mortgage.....						
2d mortgage.....						
3d mortgage.....						
Pullman Palace Car	123		123		124 1/4	125 1/4
Quickkill'g Min'g Co						9 1/4
Preferred.....						
St. Louis & San Fran				32 1/4		
Preferred.....					52	53
1st Preferred.....	93 1/4				95	96 1/4
St. L., Alt' n & T. H.			42 1/4	40	45 1/4	46 1/4
Preferred.....					90	91 1/4
1st mortgage.....						
2d mort. pref.....						108
Income bonds.....						98
St. L., Iron Mt. & S.						
1st mortgage.....						
2d mortgage.....				103 1/4		
Toledo and Wabash...						
1st mortgage.....						
2d mortgage.....			96	96 1/4		
7s, Consolidated...						
St. Louis Division						
Union Pacific.....	101 1/4	102 1/4	99 1/4	98 1/4	101 1/4	102
1st mortgage.....	115 1/4		115 1/4	115 1/4	115	116 1/4
Land Grant 7s...		110 1/4	110 1/4	111		111 1/4
Sinking Fund 8s...		117			117 1/4	
United States Ex...	67		65			
Wabash, St. L. & Pac	33 1/4	33 1/4	32 1/4	33 1/4	33 1/4	34 1/4
Preferred.....	53	53 1/4	53 1/4	53 1/4	54 1/4	54 1/4
New mort. 7s...						
Wells-Fargo Ex...				130	129 1/4	
Western Pacific b'ds						121 1/4
Western Union Tel.	81 1/4	81 1/4	80 1/4	80 1/4	82 1/4	83
7s, S. F. conv., 1900						

## FEDERAL STOCKS:—

U. S. 4s, 1907, reg...	119 1/4			120		
U. S. 4s, 1907, coup...	120 1/4			120 1/4		
U. S. 4 1/4s, 1891, reg...	113 1/4			113 1/4	113 1/4	
U. S. 4 1/4s, 1891, coup...			113 1/4		113 1/4	
U. S. 5s, cont'd at 3 1/4			102 1/4		103	
U. S. 5s, reg.....			103 1/4			
Dt. of Col. 3-6s, reg						
Dt. of Col. 3-6s, coup						

## Boston Stock Exchange.

Closing Prices for the Week Ending Dec. 13.

	Th.7.	F.8.	Sat.9.	M.11.	Tu.12.	W.13.
Atch., Top. & San. Fe.	85 1/4	85 1/4	86 1/4	83 1/4	86 1/4	87 1/4
1st mortgage.....	119 1/4	119 1/4				120
Land Grant 7s...						
Boston & Albany...			174	173	173 1/4	173 1/4
Boston and Lowell...			100			
Boston & Maine...	147 1/4	147 1/4	147 1/4		148	
Boston & Providence	161		160 1/4	160 1/4	160 1/4	160 1/4
Bos'n, Hart. & Erie 7s						
Burl. & Mo. R. L. G. 7s			115			
Burl. & Mo. R. in Neb						
6s, exempt.....						
4s.....						
Chi., Burl. & Quincy	124 1/4	124 1/4	125 1/4	126	127 1/4	128 1/4
Cin., Sand. & Cleve (\$50)	24					
Concor. (\$50).....						
Connecticut River...						
Eastern.....	32 1/4		33	34	33 1/4	
New 6s, Bond....	109	109 1/4		110 1/4	110 1/4	110

Fitchburg.....						
N. Y. & New England	47 1/4	46 1/4	46 1/4	46 1/4	47 1/4	48
7s.....	114 1/4					115
Northern N. H.....		108	107 1/4			108
Norwich & Worcester						
Ogden & Lake Cham						
Old Colony.....	136	136 1/4		136 1/4	137	
Ph., Wil. & Balt. (\$50)...	64					
Portl'd, Saco & Ports						
Pueblo & Ark Val 7s	113			112 1/4	113	
Pullman Palace Car				122 1/4		
Union Pacific.....	101 1/4	102	102	98 1/4	100 1/4	102 1/4
6s.....				112 1/4	112 1/4	
Land Grant 7s...						
Sinking Fund 8s...						
Vermont & Mass...						
Worcester & Nashua						
Cambridge (Horse)...			95			90
Metropolitan (Horse)	75			75	75	
Middlesex (Horse)...						
Cal. & Hecla Min'g Co	250	250	250 1/4	251	250 1/4	
Quincy.....	61		62	62	62 1/4	

## Philadelphia Stock Exchange.

Closing Prices for the Week Ending Dec. 12.

	W.6.	Th.7.	F.8.	Sat.9.	M.11.	Tu.12.
Allegh'y Val. 7 3/4-10s					123	
7s, Income.....	47	48 1/4	47 1/4			
Buff., Pitts & West.	18	17 1/4		17 1/4	17 1/4	17 1/4
Camd'n & Am. 6s, '83						
6s, 1889.....				106		
Mort. 6s, 1889....	111 1/4					
Camden & Atlantic						
Preferred.....						
1st mortgage.....						
2d mortgage.....						
Catawissa.....						
Preferred.....				53		
ad pref.....						
7s, new.....						
Del. & Bound Brook						
7s.....						
Elmira & Williamspt						
Preferred.....						
Hunt. & B. Top Mt.		15		15		16
Preferred.....						
2d mortgage.....						
Lehigh Navigation.	38 1/4	37 1/4	37 1/4	38	38	38 1/4
6s, 1884.....			103			
Gold Loan.....			113	112 1/2		
Railroad Loan....						115
Conv. Gold Loan....						
Consol. Mort. 7s....						
Lehigh Valley.....	64	63 1/4	64	64 1/4	64 1/4	64 1/4
1st mort. 6s, coup						
2d mort. 6s, reg....		132			119	
Consol mort. 6s....						132 1/4
Consol. mtg. 6s, reg			120	118 1/2	119 1/4	
Little Senaykill....						
Minehill & Sch. Hav'n				63		
North Pennsylvania				63 1/4	63 1/4	64
1st mortgage 6s....						
2d mortgage 7s....						
Genl. mtg. 7s, coup						
Genl. mtg. 7s, reg						
Northern Central..	55 1/4	56 1/4			56 1/4	57 1/4
5s.....					100	100 1/4
Northern Pacific...	46 1/4	44 1/4	43 1/4	43 1/4	43 1/4	44 1/4
Preferred.....	93	97	96 1/4	83 1/2	83 1/4	87 1/4
Pennsylvania R. B.	59 1/4	59 1/4	59 1/4	59 1/4	59 1/4	60
1st mortgage.....						
Gen'l mort.....			124	124	124	
Gen'l mort reg....						
Consol. mort. 6s....						
Consol. mort. reg....						
Pa. State 5s, new...		118				
do 4s, new.....						
do 3 1/4s, 1912....						
Phila. & Reading...	26	25 1/4	25 1/4		25 1/4	26 1/4
1st mortgage 6s....						
7s of 1893.....						
7s, new convert....		66	69	69		
Consol. mort. 7s....			122 1/4			
Consol. mort. reg....						123
Gen'l mort. 6s....	93 1/4	94				93 1/4
Def. Income bonds						
Philadelphia & Erie	21 1/4	21	102 1/4	102 1/4		20
1st mortgage 5s....						
2d mortgage 7s....						
Pittab., Cin. & St. L. 7s	119 1/4	119 1/4	119 1/4			
Pitts., Tit. & Buff. 7s		95				
Schuylkill Navi'n.						
Preferred.....						
6s, 1897.....	106 1/4					
6s, 1907.....			89 1/4			
United Co. of N. J..	188	188			188	188
Hestonville, (Horse)	16					16
Ch' & Nant & Walnot						



## Baltimore Stock Exchange.

Closing Prices for the Week Ending Dec. 12.

W.6. Th.7. F.8. Sat.9. M.11.Tu.12.

Baltimore & Ohio.....	200	200	200	200	200	200
6s, 1885.....	101	101	101	101	101	101
Central Ohio (\$50).....	101	101	101	101	101	101
1st mortgage.....	101	101	101	101	101	101
Marietta & Cincin'ti.....	101	101	101	101	101	101
1st mortgage, 7s.....	101	101	101	101	101	101
2d mortgage, 7s.....	101	101	101	101	101	101
3d mortgage, 8s.....	101	101	101	101	101	101
Northern Cen. (\$50).....	101	101	101	101	101	101
2d mort. 6s, 1885.....	101	101	101	101	101	101
3d mort. 6s, 1900.....	101	101	101	101	101	101
6s, 1900, gold.....	101	101	101	101	101	101
6s, 1904, gold.....	101	101	101	101	101	101
Pitts. & Connellsv. 7s.....	101	101	101	101	101	101
Virginia 6s Consol.....	101	101	101	101	101	101
Consol. coupons.....	101	101	101	101	101	101
10-40 bonds.....	101	101	101	101	101	101
Def'd Certificates.....	101	101	101	101	101	101
New 3s.....	101	101	101	101	101	101
Western Maryland.....	101	101	101	101	101	101
1st M. end. by Balt.....	101	101	101	101	101	101
2d M. do.....	101	101	101	101	101	101
3d M. do.....	101	101	101	101	101	101
1st M. unendorsed.....	101	101	101	101	101	101
2d M. end. Wash Co.....	101	101	101	101	101	101
2d M. preferred.....	101	101	101	101	101	101
City Passenger R. R.....	101	101	101	101	101	101

## London Stock Exchange.

Closing Prices—

	Nov. 17.	Nov. 24.
Baltimore and Ohio 5s, 1927.....	108	110
Central of N. J., \$100 shares.....	80	85
Do. consol. mort.....	110	112
Do. Income Bonds.....	88	92
Central Pacific of Cal., \$100 shs.....	91	86
Do. 1st mort. 6s, 1895-98.....	117	119
Del. G'd Haven & Mil. Equip. bds.....	117	118
Do. Con. M. sp. c., till '83 after 6p. c.....	117	117
Illinois Central \$100 shares.....	151	150
Do. S. F. 5s, 1903.....	104	106
Lehigh Valley Consol. mort. 1923.....	112	116
Louisville and Nashville mort. 6s 8s.....	91	92
Do. capital stock \$100 shares.....	52	51
N. Y. Cen. & Hud. R. mort. bonds.....	131	136
Do. \$100 shares.....	136	137
Do. mort. bonds (stg.).....	122	124
N. Y. Lake Erie & West. \$100 shs.....	39	36
Do. 6 p. c. pref. \$100 shares.....	86	86
Do. 1st Con. Mort. bonds (Erie).....	127	130
Do. do. Funded Coupon bonds.....	124	127
Do. 2d Consol. Mort. bonds.....	93	99
Do. do. Funded Coupon bonds.....	97	99
N. Y. Pa. & Ohio 1st mort. bonds.....	51	49
Do. Prior Lien bonds (sterling).....	100	105
Pennsylvania \$50 shares.....	61	60
General Mortgage.....	123	126
Phil. & Erie Gen. mort. 6s, 1920.....	117	119
Philadelphia & Reading \$50 shs.....	29	26
General Consol Mortgage.....	117	119
Do. Improvement Mortgage.....	103	105
Do. Gen. Mtg. '74, ex-def'd coup. 6p.....	98	98
St. L. Bridge 1st mort. gold bond.....	123	123
Do. 1st pref. stock.....	94	98
S. P. of Cal., 1st mort 6s, 1905-6.....	107	106
Union Pacific 1st mtg. 6s, 1896-9.....	117	119
Wabash, St. L. & P. \$100 shares.....	33	32
Do. \$100 pref shares.....	60	55
Do. gen. mort. bonds.....	82	83

## AMERICAN RAILROAD JOURNAL

## Financial and Commercial Review.

WEDNESDAY EVENING, December 14, 1882.

THE rate for call loans on stocks at 12 o'clock was 5 per cent. Time money was 5 to 6 per cent, and mercantile paper 6 to 8 per cent. At 2 o'clock 4½ per cent was the ruling rate, and between 2 and 3 o'clock 3 to 3½ per cent.

The posted rates for foreign exchange were 4.81½ and 4.85½. Sixty-day bills were 4.8c½. Demand was 4.8½ and 4.8s. Cables were 4.85½ and 4.85½. Commercial bills were 4.79@4.79½. Continental exchange was as follows: France, 5.23½@5.23½ and 5.20½@5.20; Reichsmarks, 94½@94½ and 95½@95½; Guilders, 39½@39½.

As previously stated by us the capital stock of the Canadian Pacific Railway Co. was increased from \$25,000,000 to \$100,000,000 at a meeting of the shareholders held for that purpose in Montreal on the 27th ult., at which there were present R. B. Angus, George Stephen, D. A. Smith and J. J. Hill, of St. Paul, and Geo. Bliss and J. S. Kennedy of New York. This increase is not out of proportion to the magnitude of the system, nor too large to enable the company to pay a dividend upon it after the line shall have been completed and fairly in operation.

Owing to the alleged excessive tolls charged to the Grand Trunk Railway Company of Canada over the International Bridge between Fort Erie and Buffalo and the Suspension Bridge, the Canada Southern Railway Company has found it convenient to close a contract for the construction of a new suspension bridge over the Niagara River about a quarter of a mile south of the old Suspension Bridge. It is proposed to have the new bridge completed and ready for traffic by the 1st of September, 1883. The right of way, together with ample yard-room, has been secured on both sides of the river. This means a close business connection with the New York Central and Hudson River Railroad, now that the traffic arrangement between the Michigan Central and Canada Southern has been ratified by the stockholders of both companies.

Referring to the St. Paul and Duluth Railroad, the Philadelphia Record says that it has been managed for the benefit of the shareholders entirely, and not for the sake of speculation. It is about 200 miles long, has a debt of only \$1,000,000 at 5 per cent, has 50,000 shares of preferred stock and 40,000 shares of common stock. The company has the right to redeem the preferred shares from the proceeds of the land sales, and as it has about 1,600,000 acres of land which will average over \$5 per acre it can readily be seen that the road will in time belong entirely to the common stockholders. It is paying regular dividends on the preferred stock at the rate of 7 per cent per annum, and is earning considerably more than sufficient for that purpose.

The Buffalo and Southwestern Railroad was leased to the New York, Lake Erie and Western Railroad Company August 1, 1880, and at that time the Buffalo and Southwestern Railroad Co. agreed to pay its lessees \$120,000 for improvements, and that amount, in addition to the interest on its bonds, was paid on the 1st of July. The business has increased from \$180,000 the first year to \$750,000 the past year. The first dividend ever paid will be paid January 1, 1883.

The directors of the Philadelphia and Reading Railroad Co. met on the 11th inst. and approved of the traffic agreement between the Philadelphia and Reading Railroad and Coal and Iron Company, the Pittsburgh, McKeesport and Youghiogheny, the Pittsburgh and Erie the Lake Shore and Michigan Southern, and the South Pennsylvania railroad companies. A mortgage of \$20,000,000 is to be created to build the South Pennsylvania, each of the companies named agreeing to set apart 20 per cent of the gross earnings accruing from the new business to meet the interest on the mortgage.

The total receipts for tolls on the New York canals for the season of 1882, up to December 1, were \$65,155.51; for the whole season of 1881, \$63,621.11; showing a gain in favor of this year of \$2,574.40. Last year there were 211 days of navigation and this year 241 days.

The late committee of consolidated first mortgage bondholders of the Columbus, Chicago and Indiana Central Railway Company will pay a cash dividend of \$25.13 on each certificate for a bond of \$1,000 deposited under the agreements of May 17 and Aug. 22, 1879, on presentation at the Union Trust Company.

Articles of agreement have been perfected between the Norfolk and Western Railroad, the New River Railroad of Virginia, the New River Railroad of West Virginia, and the East River companies, confirming the consolidation and merging of those roads, and the papers have been deposited with the proper State authorities.

The New York, Pennsylvania and Ohio Railroad Company reports to the State Engineer for the year ending September 30, its passenger earnings as \$1,314,514.32; total earnings, \$5,659,182.20; total charges against earnings, \$5,429,563.53.

The lessee of the Albany and Susquehanna, the Rensselaer and Saratoga, and the New York and Canada railroads reports to the State Engineer for the year ended September 30, as follows: The passenger earnings of the Albany and Susquehanna Railroad Company were \$359,013.01; total earnings, \$2,274,014.55; charges against earnings, \$1,188,982.06. The passenger earnings of the Rensselaer and Saratoga Railroad Company were \$784,489.15; total earnings, \$2,114,141.42; charges against earnings, \$2,042,970.71. The passenger earnings of the New York and Canada Railroad Company were \$230,275.26; total earnings, \$765,556.58; charges against earnings, \$306,859.81.

The Legislature of Alabama has vacated the charter of the City of Selma, the third municipality of the State

The city owes a debt of \$380,900, all incurred through issuing bonds in aid of railroads and all bearing eight per cent interest. For some years the city has failed to meet the interest, and the charter was abolished to rid the city of the debt. The bondholders will now be forced to such terms as the people choose to make. The citizens offered at one time to refund dollar for dollar at a lower rate of interest, but the bondholders refused. The tax levied to meet the interest has been one per cent.

The Brazilian Government's new duty on foreign products went into effect on the 9th inst. A general duty of 10 per cent has been fixed on all imports, and in certain specially designated cases 50 and 60 per cent has been added. Hardware and agricultural implements, principally manufactured here, are included in the latter class.

The surface railways and omnibuses of New York City carried in 1877 over 114,492,831 passengers, and in 1880 102,420,047 passengers. The elevated railways in Sixth and Third avenues, carried in 1880, 54,414,457 passengers. The total number of passengers carried by the surface and elevated railways and omnibuses, not including the elevated railways in Ninth and Second avenues, in 1880 was 46,241,667 more than in 1877.

The trustees of the Atlantic and Great Western Railway Company announce a dividend of \$2.10 in cash next January upon the first mortgage bonds.

The Governor of South Carolina, in his recent message shows that the securities of that State are sold upon the market above par; that there is no floating debt; that the current expenses, as they accrue, are met with current receipts; and that there is a balance of \$98,117 in the State treasury awaiting disposition by the Legislature. Great progress is being made in improving the educational system, which promises soon to compare favorably with the best of the other States. The revenues of the State for current expenditures are derived from the net earnings of the penitentiary, which amounted to over \$40,000 last year, from the phosphate royalty, and from the general tax. Last year the phosphate royalty amounted to \$138,254, an increase of \$17,000 compared with last year, and this resource promises to be a steadily increasing one. The usual and ordinary expenses of the State Government not defrayed by the royalty and the surplus in the treasury can be met by a levy of one-half of a mill upon the dollar of taxable values; that is, five cents on every hundred dollars of taxable property of the State. The levy for the interest on the public debt amounts to 3.1 mills, making the general State levy 3.6, against 4½ mills last year.

The Commissioner of Pensions, in his annual report, says in relation to the "Pension population" of the country that he regrets that no provision was made in the tenth census for its enumeration. After confessing his inability to procure accurate data on the subject, he says that the best approximation that can be made shows that of the 2,063,391 soldiers who enlisted during the war pensions have been applied for by or on account of only 26 per cent. The report concludes with the statement that from the best available information it appears that there is a surviving soldier population of a little over 1,000,000, out of which claims for pension in the future may be made by those who incurred pensionable disabilities.

The report of the President of the Richmond and Petersburg Railroad Company for the year ending September 30, 1882, shows that the gross receipts were \$174,378.20, the expenses \$117,881.57 and the net receipts \$55,996.63; interest on debt, \$116,954.31; net revenue, \$39,642.32. The usual semi-annual dividend of 3 per cent was paid on the 1st of January, 1882; \$25,000 of the old 8 per cent bonds, maturing on the 1st of April, were paid off. No dividend was paid on the 1st of July, and the earnings were used in repairing and roofing the James River Bridge. This structure was burned on the 26th of last March, and the present trestle bridge, nearly three-fourths of a mile long, was ready for use two months after. Credit is given to J. R. Kenly, the superintendent, formerly of the Union Railroad, Baltimore, for the prompt manner in which the work was done. The direct loss to the company from the fire was about \$60,000. It is proposed to cross the James River by an iron bridge, a part to be built next year and the remainder in 1884.

The following quotations of sales of railway and other securities, for the week, are in addition to those given elsewhere in our columns.

New York.—Atlantic and Pacific 1st, 96; Albany and

Susq. consol., 125; Boston and New York Air Line pref. 79%; Chicago, Burlington and Quincy, Iowa div. 48, 84%; do. 88, 103%; Cedar Falls and Minnesota, 16; Chicago, St. Paul, Minn. and Omaha, 55%; do. pref., 115%; do. consol., 107; Chicago, St. Louis and New Orleans, 80; Chicago, Milwaukee and St. Paul, Chicago and Pacific 1st, 112; do. Chicago and Pacific West div. 1st, 93%; do. Southern Minn. div. 1st, 107%; Chicago and Northwestern S. F. 58, 99%; Chicago, St. Paul and Minneapolis 1st, 111; Central Iowa 1st, 108%; Columbus, Chicago and Indiana Central inc., 51; Chesapeake and Ohio cur. 68, 53%; Denver and Rio Grande, 45%; do. 1st, 109; do. consol., 96%; Danbury and Norwalk, 75; Dubuque and Sioux City, 88; East Tennessee, Virginia and Georgia, 10%; do. pref., 18%; do. inc., 40%; do. 58, 75; Elizabethtown, Lexington and Big Sandy 68, 95; Evansville and Terre Haute 1st, 98%; do. 1st consol., 97%; Fort Worth and Denver, 30; Gulf, Colorado and Santa Fe, 1st, 110%; Green Bay, Winona and St. Paul 1st, 80%; Indiana, Bloomington and Western, 35%; do. 1st, 87%; do. Eastern div. 1st, 93; do. consol. inc., 50; International and Gt. Northern 1st, 104; do. coupon 68, 82%; Keokuk and Des Moines 1st, 101; Kansas Pacific consol., 100; do. 68, Denver div. ass., 106; Louisville, New Albany and Chicago 1st, 104%; Lake Erie and Western, 31%; Long Island, 59%; do. consol. 58, 98%; Louisville and Nashville genl. mort. 68, 88; do. New Orleans and Mobile div. 1st, 90; do. Cecellian Branch 1st, 102; do. 2d, 99%; Lehigh and Wilkesbarre inc., 42%; Minneapolis and St. Louis, 32%; do. pref., 70%; do. Iowa ext. 1st, 115; Mobile and Ohio, 19; do. 1st mort., 104%; do. 1st debent., 81%; Missouri, Kansas and Texas, 34%; do. Gen'l mort. 68, 83; do. consol., 78, 106%; do. 2d, 57; Missouri Pacific, 104%; do. 1st consol., 104%; do. 3d, 109%; Milwaukee, Lake Shore and Western pref., 49; do. inc. 80%; do. 1st, 95%; Metropolitan Elevated 2d, 86; New York, Chicago and St. Louis, 14%; do. pref., 31%; do. 1st, 94%; Nashville, Chattanooga and St. Louis, 53; do. 1st, 115; New York, Ontario and Western, 27%; Norfolk and Western pref., 51; do. genl. mort., 100%; New Orleans Pacific 1st, 87; Northern Pacific 1st, 104%; Ohio Central, 13%; do. 1st, 95; Ohio Southern 1st, 81; Oregon Transcontinental, 85; Ohio and Mississippi, Springfield div. 1st, 114; Oregon Short Line 68, 99%; Peoria, Decatur and Evansville, 26%; do. 1st, 104; Rensselaer and Saratoga, 143%; Rochester and Pittsburgh, 21; do. inc., 40; Richmond and Danville, 60; do. debent., 62%; do. 1st, 94%; Richmond, Danville and West Point, 25%; Rome, Watertown and Ogdensburg ext. 58, 73; do. inc., 43; St. Paul and Duluth, 38; do. pref., 97; St. Paul, Minn. and Man., 144%; do. 1st, 111; do. 2d, 109; do. Dakota ext. 1st, 106%; St. Paul and Sioux City 1st, 111; St. Louis and Iron Mt., Cairo, Arkansas and Texas 1st, 105; do. 58, 74; do. Cairo and Fulton 1st, 109; Southern Pacific of Cal. 1st, 103; South Carolina 1st, 99; do. 2d, 89; do. inc., 59; South Pacific of Mo. 1st, 105; St. Louis and San Francisco 2d, class A, 95; do. B, 90%; do. C, 90; St. Louis, Kansas City and Northern, R. E. 78, 105%; do. Omaha div. 1st, 108; Toledo, Delphos and Burlington, 8%; do. 1st Main Line, 54; Texas and Pacific, 40%; do. inc. L. G., 58%; do. Rio Grande div. 1st, 80%; Warren 2d, 114; Winona and St. Peter 1st, 110; Wabash, St. Louis and Pacific gen'l. mort. 68, 79%; do. Chicago div. 1st, 81%; Arkansas 78, L. R., P. B. and N. O., 23; Georgia 68, 1886, 110; Louisiana consol., 69; Tennessee 68, old, 42%; do. compromise, 47%; Virginia 68, def., 12; American Cable, 66%; Mutual Union Tel., 23%; do. 68, 68%; Canton Co., 59%; Colorado Coal and Iron, 32; do. 68, 82%; New Central Coal, 16; Ontario Mining, 36; Standard, 64.

Boston.—Atlantic and Pacific blocks, 102; Atchison, Topeka and Santa Fe 4 1/2, 80%; do. 58, plain, 85; Burlington and Missouri River in Neb. 68, non-exempt, 102; Boston Land, 64; Boston and Albany 78, 123; Chicago, Burlington and Quincy 48, plain, 80; do. 48, Denver ext., 82%; do. 48, old, 83%; do. 78, 125; Central Iowa, 31; Chicago, Milwaukee and St. Paul, Dubuque div. 68, 101%; Cheshire, 63; Cedar Rapids and Missouri River R. R., 103; Flint and Pere Marquette, 22%; do. pref., 102; Iowa Falls and Sioux City, 88; Kansas City, Fort Scott and Gulf, 75; do. 78, 110%; Kansas City, Lawrence and Southern 58, 104; Little Rock and Ft. Smith, 47; do. 78, 107; Marquette, Houghton and Ontonagon, 65; do. pref., 117; do. 68, 103; Mexican Central, 19; do. 78, 70%; do. inc., 20; Maine Central, 76; Massachusetts Central, 34; New York and New England 68, 105; New Mexico and Southern Pacific 78, 112%; Oregon Short Line 68,

98%; Rutland pref., 21; do. 58, 67; do. 68, 96; Republican Valley 68, 102%; Sonora 78, 104%; Toledo, Cincinnati and St. Louis 4%; do. 68, 38; Toledo, Delphos and Burlington, Southeastern div. 68, 45%; do. Branch inc., 94; do. Dayton div. 68, 45; do. inc., 94; Wisconsin Central, 14%; Atlantic Mining, 16%; Franklin, 14; Huron, 2; Napa Consol. Quicksilver, 34; Osceola, 32; Pawabio, 11; Sullivan, 1; Silver Islet, 7.

Philadelphia.—Central Transp., 35%; Elmira and Williamsport 58, 99%; Huntingdon and Broad Top Mt. consol. mort. 58, 89; Morris Canal, 72; Nesquehoning Valley, 53; Northern Pacific pref. scrip., 95; Philadelphia and Reading R. R. scrip., 95@100; Philadelphia, Wilmington and Baltimore 48, 93%; Pittsburgh Av. Imp. 78, 1885, 106%; Philadelphia City 48, 1889, 112; do. 68, 1892, 122; do. 68, 1902, 132; do. 48, 1896, 110; Pennsylvania R. R. scrip., 118%; Pennsylvania Canal 68, 87; St. Paul and Duluth, 36%; do. pref., 93%; Texas and Pacific 1st, 104; do. consol. mort. 68, 92; Western Pennsylvania 68, 106; West Jersey and Atlantic 68, 108; Warren and Franklin 78, 112%; West Chester and Philadelphia 78, 118. The latest quotations are: City 68, 108@120; do. free of tax, 127@132; do. 48, new, 106@113; Pennsylvania State 58, new loan, 118@118%; do. 48, old, 112@114; do. 48, new, 116@117; Philadelphia and Reading Railroad, 26%@26%; do. consol. mort. 78, reg., 122@123; do. gen'l mort. 68, coupon, 93@94; do. 78, 1893, 118%@119; do. 78, new conv., 69@72; United New Jersey R. R. and Canal, 187%@188%; Buffalo, Pittsburgh and Western, 17%@18; Pittsburgh, Titusville and Buffalo 78, 94@95; Camden and Amboy mort. 68, 1889, 111%@112%; Pennsylvania R. R., 59%@60; do. general mort. 68, coupon, 125@126; do. reg., 123@125; do. consol. mort. 68, reg., 119@120; Little Schuylkill R. R., 58%@60; Schuylkill Navigation pref., 12@13; do. 68, 1882, 89@90; Elmira and Williamsport pref., 58@60; do. 58, 99@100; Lehigh Coal and Navigation, 38@38%; do. 68, 1884, 103@103%; do. R. R. loan, 111@116; do. Gold Loan, 112@113; do. consol. 78, reg., 115@116; Northern Pacific, 44%@44%; do. pref., 83%@83%; North Pennsylvania, 63%@64%; do. 68, 105@106; do. 78, 119@—; do. 78, General mort. reg., 124@—; Philadelphia and Erie, 19%@20%; do. 78, 114%@115; do. 58, 102@103; Minehill, 62%@63%; Catawissa, 20@21; do. pref., 53@53%; do. new pref., 52@52%; do. 78, 1900, 118@120; Lehigh Valley, 64%@65; do. 68, coupon, 118@120; do. reg., 121%@—; do. 78, reg., 132@133; do. consol. mort. reg., 119%@120; Fifth and Sixth streets (horse), —@190; Second and Third, 114@116; Thirteenth and Fifteenth, 70@80; Spruce and Pine, 44@—; Green and Coates, 80@88; Chestnut and Walnut, —@93; Germantown, 70@71; Union, 110@—; West Philadelphia, 125@—; People's, 8@8%; Continental, 103@105.

Baltimore.—Atlanta and Charlotte 1st, 107; do. 1st pref., 110 Baltimore City 68, 1890, 114%; do. 68, 1886, 109; do. 68, 1900, 123; do. 58, 1894, 113%; Baltimore and Ohio 1st pref., 108%; Columbia and Greenville 1st, 103%; do. 2d, 74; Central Ohio pref., 54%; Charlotte, Columbia and Augusta, 37%; Canton Co., 60; do. 68, 111%; Citizens Pass. R. R., 18%; George's Creek Coal, 93%; Maryland Defenses, 104%; do. Hospital 68, 105%; do. 68, 1890, 108%; Northern Central 58, Series A, 100%; do. B, 98%; Virginia and Tennessee 88, 125; Virginia Midland 1st mort., 112; do. 2d mort., 108%; do. 5th mort., 93%; Virginia, Black scrip., 33; Wilmington, Columbia and Augusta, 106. The latest quotations are: Atlanta and Charlotte 1st, 107@107%; Baltimore and Ohio, 199@200; Baltimore City 68, 1886, 105%@—; do. 68, 1890, 112%@—; do. 68, 1900, 123@125; do. 68, 1900, 118@119; do. 58, 1916, 120%@122; Columbia and Greenville 1st, 1916, 103@105; Canton Co. 68, 110@112; Marietta and Clin. 78, 1891, 127%@129; do. 78, 1896, 100%@100%; do. 88, 1890, 55%@55%; Northern Central, —@56%; do. 68, 1904, gold, 115@115%; do. 1900, gold, 117@117%; do. 58, Series A, 100@—; do. B, 97%@98%; Ohio and Mississippi, Springfield div. 1st, 114@114%; Richmond and Danville bonds 1890, 94@100; Virginia Midland 5th mort., 93%@93%; do. inc., 53@60; Virginia consol., 62%@63; do. 10-408, 43%@43%; do. 38, —@46%; Western Maryland 2d pref., 109@—.

THE Harlan & Hollingsworth Company, of Wilmington, Del., have lately completed six handsome passenger and two baggage cars for the Pittsburgh and Western Railroad.

ADVERTISE IN THE RAILROAD JOURNAL.

## From the Railroad Employees' Point of View.

PERTINENT to the subject of discharging trainmen, and the despotic power to be wielded by railroad superintendents, recently discussed in this JOURNAL, the Indianapolis Journal has the following remarks from the standpoint of the subordinates:—

"The resolution passed at the recent session of American Railway Superintendents, recommending members not to employ discharged employes unless they present letters from the superintendent of the road which they have left, stating the cause of discharge, is exciting considerable comment in railroad circles, and is not looked upon with special favor, so common has it become for superintendents to discharge men for some trivial cause. Almost invariably when a new superintendent is appointed he has friends to provide for, and often a wholesale slaughtering of employes follows the coming of a new superintendent. A case right to the point is that of the Cincinnati, Hamilton and Dayton. Of the old force there preceding the appointment of the recent superintendent by E. B. Thomas, the then general manager, there is hardly a corporal's guard left. That there are roads where new superintendents take hold, as on the Indianapolis and St. Louis Railroad, where the men have been negligent of duty and reckless, and need a thinning out, cannot be questioned, but special pains should be taken to retain old, tried and reliable men. That a radical and sweeping reform in the matter of employing and discharging subordinates is badly needed, all are ready to admit; and it is creditable to the superintendents that they recognize the fact. The problem, however, is one of the most difficult that railway officers have to deal with, and so far no satisfactory solution of the trouble is offered. It is not a secret that there are unworthy superintendents, who sometimes discharge the best men in the service of their respective companies to gratify a spirit of personal revenge, or because of a feeling of hate, engendered by the consciousness that their employes are better railroad men than themselves, or for some even more detestable reason; and that men discharged under such circumstances should be cast out as worthless railroaders is not only unjust but outrageous."

THE Henry Bill Publishing Company, Norwich, Conn., has published an engraved portrait of the late President Garfield, in a large size and properly mounted for framing. As a portrait, this picture is life-like. It is well executed and deserves a large sale. In common with all the best portraits of the lamented president, it has been produced somewhat late, but the intelligent purchaser readily understands that to make a good engraving requires a long time.

LARGE type is not necessary in advertising—blink folks don't read newspapers.

THIS PAPER may be found on file at Geo. F. Rowell & Co's Newspaper Advertising Bureau (10 Spruce St.), where advertising contracts may be made for it IN NEW YORK.



## The Coal Trade.

The leading coal-carrying companies make the following reports of their tonnage for the week ending Dec. 2, and for the year to the same date, compared with their respective amounts carried to the same time last year:—

	Week.	1882.	1881.
Phil. and Reading R. R.....	47,750	47,750	75,921
Schuylkill Canal .....	1,264	1,264	9,722
Lehigh Valley .....	68,510	6,257,159	5,791,376
Delaware, Lackawanna and Western .....	81,743	4,225,236	3,980,652
Shamokin .....	20,672	1,057,168	995,535
Central R. R. of New Jersey..	159,965	4,071,701	4,052,692
United R. R. of New Jersey...	34,987	1,589,915	1,462,479
Pennsylvania Coal.....	32,058	1,328,141	1,319,565
Delaware and Hudson Canal..	88,035	3,336,973	3,347,302
Huntingdon and Broad Top Mountain.....	10,034	428,969	482,032
Penn. and New York.....	18,172	1,447,972	1,537,607
Clearfield, Pa.....	56,388	2,636,097	2,226,413

The reports of the Reading Railroad and the Schuylkill Canal are for the two days ending December 2, and of the Lehigh Valley Railroad and the Pennsylvania and New York Canal and Railroad for the four days ending November 30. That of the Lehigh and Susquehanna Division of the Central Railroad of New Jersey is for the eleven days ending November 30, and finishes its fiscal year. The Reading's coal tonnage for the entire fiscal year ended November 30 is officially reported at 8,953,922 tons, against 8,672,589 for the previous year.

The total tonnage of anthracite coal from all the regions for the week ending Dec. 2, as reported by the several carrying companies, amounted to 520,895 tons, against 530,976 tons in the corresponding week last year, a decrease of 10,081 tons. The total amount of anthracite mined for the year is 26,803,582 tons, against 25,826,120 tons for the same period last year, an increase of 977,462 tons. The quantity of bituminous coal sent to market for the week amounted to 66,436 tons, against 64,063 tons in the corresponding week last year, an increase of 2,373 tons. The total amount of bituminous mined for the year is 4,091,959 tons, against 4,523,766 tons for the corresponding period last year, a decrease of 431,807 tons. The total tonnage of all kinds of coal for the week is 587,331 tons, against 595,031 tons in corresponding week last year, a decrease of 7,708 tons, and the total tonnage for the coal year is 30,895,431 tons, against 30,349,886 tons to same date last year, an increase of 545,605 tons. The quantity of coal and coke carried over the Pennsylvania Railroad for the week ending Dec. 2 was 230,544 tons, of which 165,844 tons were coal and 64,700 tons coke. The total tonnage for the year thus far has been 10,197,861 tons, of which 7,562,170 tons were coal and 2,635,691 tons coke. These figures embrace all the coal and coke carried over the road, east and west. The shipments of bituminous coal from the mines of the Cumberland coal region for the week ended Dec. 2 were 60,292 tons, and for the year to that date 1,342,403 tons, a decrease of 698,841 tons as compared with the corresponding period of last year. The shipments were: To the Baltimore and Ohio Railroad—For the week, 39,925 tons; year, 909,277 tons; decrease as compared with 1881, 386,713 tons. Chesapeake and Ohio Canal—Week, 13,459 tons; year, 267,278 tons; decrease as compared with 1881, 218,382 tons. Pennsylvania Railroad—Week, 6,340 tons; year, 156,609 tons, decrease from last year, 99,912 tons. The Reading Railroad shipment for last week, ending December 9, was about 178,000 tons, of which 43,000 tons were sent to and 39,500 tons shipped from Port Richmond, and 16,300 tons sent to and 17,000 tons shipped from Elizabethport.—Philadelphia Ledger, Dec. 11.

## Curious Patents.

Some investigating person has furnished the New York Times with a brief list of patents on small things, which in many instances have proved great mines of wealth to the lucky discoverer. The list might be extended to a much larger number, but we only state those given in the Times. Among these trifles is the favorite toy—the "return ball"—a wooden ball with an elastic string attached, selling for ten cents each, yielding to its patentee an income equal to \$50,000 a year. The rubber tip on the end of lead pencils affords the owner of the royalty

an independent fortune. The inventor of the gummed newspaper wrapper is also a rich man. The gimlet-pointed screw has evolved more wealth than most silver mines, and the man who first thought of putting copper tips to children's shoes is as well off as if his father had left him \$2,000,000 in United States bonds. Although roller skates are not so much used in countries where ice is abundant, in South America, especially in Brazil, they are very highly esteemed, and have yielded over \$1,000,000 to their inventor. But he had to spend fully \$125,000 in England alone fighting infringements. The "dancing Jim Crow," a toy, provides an annual income of \$75,000 to its inventor, and the common needle threader is worth \$10,000 a year to the man who thought of it. The "drive well" was an idea of Colonel Green, whose troops, during the war, were in want of water. He conceived the notion of driving a two-inch tube into the ground until water was reached and then attaching a pump. This simple contrivance was patented after the war, and the tens of thousands of farmers who have adopted it have been obliged to pay him a royalty, a moderate estimate of which is placed at \$3,000,000. The spring window shade yields an income of \$100,000 a year; the stylographic pen also brings in \$100,000 yearly; the marking pen for shading in different colors, \$100,000; rubber stamps the same. A very large fortune has been reaped by a western miner, who, ten years since, invented a metal rivet or eyelet at each end of the mouth of coat and pants pockets to resist the strain caused by the carriage of pieces of ore and heavy tools.—Scientific American.

## Jacksonville and Southeastern Railroad.

THE junction of the St. Louis, Vandalia and Terre Haute Railroad with the Jacksonville and Southeastern Railroad, now being built, is somewhat changed from the first survey. It has been ascertained that the former route, through Henderson station, passing as it did, through the brakes and bottom lands of the Okan River, could only be constructed at an immense cost. The company have therefore concluded to run a parallel line with the St. Louis and Vandalia, for a few miles, to the city of Greenville, and from that point cross over and, passing through a bottom section, intersect the Ohio and Mississippi some twenty miles distant at Carlyle. This route, besides being so much less expensive, is thought to be more desirable for freighting interests. Cars are expected to be running as far as Henderson station inside of thirty days.

## A FIRST-CLASS STENOGRAPHER

and TYPE-WRITER, who also understands Book-keeping, wants a position as Stenographer to a Railroad official in New York City. Has been stenographer to a railroad president, and lately with a superintendent of construction. Address "STENOGRAPHER," Care of AMERICAN RAILROAD JOURNAL, 284 Pearl street, New York City.

## NOTICE.

H. W. JOHNS' ASBESTOS AIR CHAMBER COVERING, consisting of Asbestos Sheathing or Lining Felt, combined with Hair Felt, for Steam Pipe and other heated surfaces, is patented, and infringers will be prosecuted to the full extent of the law.

H. W. JOHNS Mfg Co.,  
87 Maiden Lane, N. Y. \*.\*

## FOR SALE.

Locomotives—Two Second-hand Narrow-Gauge Engines in good order.  
One Second-hand "Tank" Narrow-Gauge Engine, 10 tons.  
Several Second-hand Standard-Gauge Locomotives in good order, immediate delivery.  
One new 3 ft. Gauge Passenger Engine, 22 tons, prompt delivery.  
Six new 4 ft. 8½ Gauge Locomotives, cylinders 17x24, weight 35 tons. November and December delivery.  
Two new 3 ft. Gauge Locomotives, Cylinders 12x18, weight 20 tons. December and January delivery.  
Cars—Passenger and Freight Cars of all descriptions for early delivery.  
Rails—16lb., 20lb. 30lb. 35lb. and 56lb. Rails.  
Car Wheels and Axles.  
Narrow-Gauge Rolling-stock a specialty.

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## Continuous Automatic FREIGHT BRAKES.

Requiring no other Connection  
between Cars than the ordinary  
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and Pin.

SIMPLE, DURABLE, AND EFFICIENT.

Brakes can be applied to every Car in the longest train, from the engine or caboose, or from any car in the train. It can be readily attached to any car, and adapted to ordinary brake beams, shoes, etc. There is no possibility of damaging wheels by "sliding."

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Railroad and manufacturing companies, or parties able to co-operate with patentee in their manufacture and introduction, are invited to correspond with

WM. C. SCHULTZE,  
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## RAILROAD AND CANAL DIVIDEND STATEMENT.

Showing the amount of Stock Outstanding, the Dividend Periods and the date of last Dividend.

Marked thus (*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus (*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.	Marked thus (*) are leased roads.	Stock outstanding.	Divide'd Periods.	Last Dividend Payable.
Albany and Susq.....100	2,500,000	semi-an	July '82 2	Little Miami.....50	4,637,300	q'arterly	Dec. '82 2	Ware River.....100	750,000	semi-an	July '82 3 1/2
Ashuelot.....100	210,000	q'arterly	Oct. '81 3 1/2	Little Rock & Ft. S.....100	4,096,135	semi-an	July '81 10 1/2	Warren (N. J.).....100	1,800,000	semi-an	Apr. '82 3 1/2
Atch., Top. and S. Fer.....100	54,000,000	q'arterly	Nov. '82 1 1/2	Little Schuylkill.....50	2,646,100	semi-an	July '82 3 1/2	Warwick Valley.....100	340,000	semi-an	July '82 2 1/2
Atlanta and W. Point.....100	1,232,200	semi-an	Jan. '82 6	Long Island.....50	10,000,000	q'arterly	Nov. '82 1	Westchester & Phil. pref.....100	821,300	semi-an	July '80 2
Atlantic and St. Law.....100	5,420,000	semi-an	Mar. '82 3	Louisville & Nashv.....100	19,130,913	semi-an	Feb. '82 3	West Jersey.....100	1,359,750	semi-an	Sept. '82 3
Augusta and Savan.....100	1,022,900	semi-an	June '81 3 1/2	Lowell & Andover.....100	500,000	semi-an	Jan. '82 3 1/2	Wilmington & Weld.....100	1,450,200	semi-an	July '82 3
Avon, Genesee & M.....100	225,000	semi-an	July '81 3	Lykens Valley.....100	600,000	q'arterly	Oct. '81 2 1/2	Wil., Col., & Aug.....100	960,000	semi-an	July '82 3
Baltimore and Ohio.....100	14,792,566	semi-an	Nov. '82 5	Manchester & Law.....100	1,000,000	semi-an	Nov. '82 5	Winchester & Poto'c.....100	180,000	semi-an	July '82 3
" " pref.....100	5,000,000	semi-an	July '82 3	Manhattan.....100	13,000,000	q'arterly	Jan. '83 1 1/2	Winchester & Strasb.....100	74,700	semi-an	July '82 3
Washington Br.....100	1,650,000	semi-an	Nov. '82 5	" " 1st pref.....100	6,500,000	q'arterly	Jan. '83 1 1/2	Worcester & Nashua.....75	1,789,800	semi-an	July '82 3 1/2
Berkshire.....100	600,000	q'arterly	Apr. '82 1 1/2	" " 2d pref.....100	6,500,000	q'arterly	Jan. '83 1 1/2				
Boston and Albany.....100	20,000,000	q'arterly	Dec. '82 2	Marietta & Cincinnati.....50	1,386,350	semi-an	Sep. '66 3 1/2				
Bos. & N. Y. Air Line pf.....100	2,795,227	q'arterly	June '82 1	" " 1st pref.....100	8,105,600	semi-an	Sep. '66 3 1/2	Albany City.....100	200,000	annual	.....'80 5 1/2
Bos., Cl. & N. B. pref.....100	1,750,100	semi-an	Oct. '82 3 1/2	" " 2d pref.....100	4,440,000	semi-an	Sep. '66 3 1/2	Baltimore City.....25	1,000,000	semi-an	Oct. '82 3
Bos., Conc. & N. B. pref.....100	800,000	semi-an	Nov. '82 3	Marq. Hout. & Ont. pf.....100	2,259,026	semi-an	Aug. '82 4	Balt., Cat. & El. Mills.....100	.....	semi-an	July '82 2
Boston and Lowell.....100	3,940,000	semi-an	Jan. '83 2 1/2	Massachusetts.....100	400,000	semi-an	Aug. '82 3	Bleeker St. & Ful. F. Y.....100	900,000	semi-an	July '82 3 1/2
Boston and Maine.....100	6,921,274	semi-an	Nov. '82 4	Metropolitan.....100	6,500,000	q'arterly	Oct. '82 1 1/2	Boston & Chelsea pref.....50	110,000	semi-an	Oct. '82 3
Boston & Providence.....100	4,000,000	semi-an	Nov. '82 4	Michigan Central.....100	18,738,204	q'arterly	Aug. '81 1	Broadway (Brooklyn).....100	250,000	q'arterly	Oct. '82 6
Attleborough Br.....100	131,700	semi-an	July '82 3 1/2	Middlesex Central.....100	280,000	semi-an	Aug. '82 3	B'way & 7th Av. (N. Y.).....100	2,100,000	q'arterly	Oct. '82 2
Bos., Revere & Lynn.....100	419,400	semi-an	July '82 3 1/2	Mill Creek & Minehill.....50	323,000	semi-an	July '82 5	B'klyn & Hunter's Pt.....100	400,000	semi-an	Oct. '82 6
Buffalo, N. Y. & Erie.....100	950,000	semi-an	June '82 3	M. Hill & Schuyl. Hav.....50	4,022,500	semi-an	July '82 3 1/2	Brooklyn City.....100	2,000,000	q'arterly	Nov. '82 3 1/2
Camden & Atlantic.....50	377,400	q'arterly	Nov. '82 3	Missouri Pacific.....100	28,169,800	q'arterly	Jan. '83 1 1/2	Bushwick (Brooklyn).....100	309,000	semi-an	Oct. '82 6
" " pref.....50	880,650	q'arterly	Nov. '82 4	Mobile & Montgomery.....100	3,029,517	semi-an	Feb. '80 2 1/2	Cambridge.....100	908,000	q'arterly	Oct. '82 4 1/2
Camden & Burl. Co.....100	381,925	semi-an	July '82 2 1/2	Morris and Essex.....50	15,000,000	semi-an	July '82 3 1/2	Can. Park. N. & E. Riv.....100	1,800,000	q'arterly	Oct. '82 6
Canada Southern.....100	15,000,000	semi-an	June '81 2 1/2	Mt Carbon & P. Carbon.....50	800,000	semi-an	Nov. '82 4	Christoph. & Tenth St.....100	650,000	semi-an	Aug. '82 2 1/2
Cape May & Millville.....50	447,000	annual	Oct. '82 2 1/2	Nashua and Lowell.....100	1,305,800	semi-an	Oct. '82 1 1/2	Citizens (Phil.).....50	192,500	q'arterly	Jan. '82 2 1/2
Catawissa.....50	1,559,500	semi-an	Nov. '82 3 1/2	Nashua & Rochester.....100	1,827,000	semi-an	June '81 3	Citizens (Phg.).....50	200,000	annual	.....'80 1 1/2
" " pref.....50	2,200,000	semi-an	Nov. '82 3 1/2	Nashv. & Decatur.....100	6,670,325	semi-an	Apr. '82 1 1/2	Coney Island & B'klyn.....100	500,000	semi-an	Oct. '80 5
" " new pref.....50	1,000,000	semi-an	Nov. '82 3 1/2	Nash., Chat. & St. Louis.....25	2,000,000	semi-an	July '82 5	Continental (Phil.).....50	580,000	semi-an	Jan. '83 6
Cayuga and Susq.....50	589,110	semi-an	July '81 4 1/2	Naugatuck.....100	1,300,000	semi-an	Sept. '82 3	D. Dock, E. B'way & Batro.....100	1,200,000	q'arterly	Aug. '82 4
Cedar Rapids & Mo. R.....100	6,850,400	q'arterly	Nov. '82 1 1/2	Nesquehoning Valley.....50	600,000	q'arterly	Oct. '81 1	Eighth Av. (N. Y.).....100	1,000,000	q'arterly	Oct. '82 3
" " pref.....100	769,600	semi-an	Aug. '82 3 1/2	N. Castle & Beaver Val.....50	1,500,000	q'arterly	Oct. '82 1 1/2	42d St. & St. Ferry.....100	747,000	semi-an	May '82 6
Central of Georgia.....100	7,500,000	semi-an	June '82 4	New London North.....100	89,428,330	q'arterly	Jan. '83 2	Frank & Southw (Ph).....50	600,000	q'arterly	Oct. '82 6
Central of New Jersey.....100	18,563,200	q'arterly	July '76 2 1/2	N. Y. Cen. & Hud. R.....100	7,950,000	q'arterly	Jan. '83 4	Germantown, (Ph.).....50	572,800	q'arterly	Oct. '82 2 1/2
Central Ohio.....50	4,377,950	semi-an	July '82 3	" " pref.....100	1,500,000	q'arterly	Jan. '83 4	Girard College (Ph.).....50	500,000	semi-an	July '71 3
" " pref.....50	411,550	semi-an	July '82 3	" " City Line.....100	77,087,600	annual	Jan. '83 6	Grand St. & Newton.....100	170,091	semi-an	July '81 2 1/2
Central Pacific.....100	59,275,500	q'arterly	Aug. '82 3	N. Y., Lake Erie & West.....100	7,987,500	annual	Jan. '83 6	Green & Coates St. (Ph).....50	150,000	q'arterly	Oct. '82 3
Chemung.....100	380,000	q'arterly	July '81 1 1/2	" " pref.....100	15,500,000	semi-an	July '82 5	Heston, Mantau & F. m.....50	299,381	semi-an	Jan. '75 4
Cheshire preferred.....100	2,155,300	semi-an	July '82 1 1/2	N. Y., N. H. & Hart.....100	3,000,000	q'arterly	Nov. '82 2	Highland.....100	600,000	semi-an	July '82 4
Chicago and Alton.....100	11,181,741	semi-an	Sept. '82 4	N. Y., Prov. & Boston.....100	1,000,000	semi-an	July '81 3	Lomb. & South Sts (Ph).....25	195,000	semi-an	Oct. '75 4
" " pref.....100	2,445,400	semi-an	Sept. '82 4	Niag. Bridge & Canand.....100	1,000,000	semi-an	Sept. '81 3	Lynn and Boston.....100	200,000	semi-an	Nov. '82 4
Chi., Burl. & Quincy.....100	55,337,455	q'arterly	Dec. '82 2	North Carolina.....100	3,000,000	semi-an	Sept. '81 3	Malden and Melrose.....100	165,000	.....	.....
Chi., Iowa & Nebras.....100	3,916,200	semi-an	July '82 4	" " pref.....100	1,000,000	semi-an	May '81 4	Metropolitan (Bost.).....100	1,500,000	semi-an	July '82 4
Chi., Mil. & St. Paul.....100	20,404,261	semi-an	Oct. '82 3 1/2	N. Eastern (S. C.) pref.....100	86,000	semi-an	Dec. '82 1	Middlesex (Boston).....100	650,000	semi-an	Nov. '82 3 1/2
" " pref.....100	14,401,483	semi-an	Oct. '82 3 1/2	Norfolk & Western pref.....100	15,000,000	q'arterly	Dec. '82 1 1/2	N. Y., Bay Ridge & Jam.....100	150,000	.....	Oct. '87 7
Chi. & N. Western.....100	14,988,257	semi-an	Dec. '82 3 1/2	North Pennsylvania.....50	4,527,150	q'arterly	Nov. '82 1 1/2	Ninth Av. (N. Y.).....100	707,320	.....	.....
" " pref.....100	21,525,353	q'arterly	Dec. '82 2	Northern Central.....50	6,142,000	semi-an	July '82 3	Orange & Newark.....100	282,555	.....	.....
Chi., R. I. & Pacific.....100	41,960,000	semi-an	Feb. '82 1 1/2	Northern N. Hampsh.....100	3,068,400	semi-an	Dec. '82 3	People's (Phila.) pref.....25	124,744	.....	July '82 2
Chi. and West Mich.....100	6,151,000	q'arterly	Oct. '82 1 1/2	Northern Pacific pref.....100	42,312,589	semi-an	Jan. '83 11 1/2	Philadelphia City.....50	475,000	semi-an	July '82 4
Chi., St. P. & M. O. pref.....100	10,390,000	q'arterly	Oct. '82 1 1/2	Norwich & Worcester.....100	2,604,400	semi-an	Jan. '83 5	Phila. and Darby.....20	200,000	semi-an	July '81 3 1/2
C. Ind., St. L. & Chi.....100	6,000,000	q'arterly	July '82 1 1/2	Oregon & Transcon.....100	40,000,000	q'arterly	Jan. '83 1 1/2	Phila. & Grey's Ferry.....50	308,000	semi-an	Jan. '82 6
Cin., Sand. & Clev. pf.....50	429,037	semi-an	Nov. '82 3	Old Colony.....100	7,333,800	semi-an	Jan. '83 3 1/2	Pbg. Alleg. & Manches.....50	300,000	q'arterly	Oct. '81 3
Clev. and Mahoning.....50	3,759,200	semi-an	Nov. '81 3 1/2	Oregon R'way & Nav.....100	6,000,000	q'arterly	Nov. '82 2	Ridge Avenue (Ph.).....50	420,000	semi-an	Oct. '81 11
Clev. and Pittsburg.....50	11,244,336	q'arterly	Dec. '82 1 1/2	Oswego & Syracuse.....100	1,320,400	semi-an	Aug. '81 4 1/2	Second Avenue (N. Y.).....100	1,109,500	semi-an	July '82 4
Columbus & Xenia.....50	1,786,200	q'arterly	Dec. '82 2	Panama.....100	7,000,000	semi-an	July '82 6 1/2	Second & Third St. (Ph).....50	777,076	q'arterly	Jan. '82 4 1/2
Colum. & Hocking Val.....100	2,500,200	semi-an	Aug. '81 2 1/2	Paterson & Hudson.....100	630,000	semi-an	July '82 4	17th & 19th Sts (Ph.).....50	250,000	semi-an	July '81 3
Concord.....100	1,500,000	semi-an	Nov. '82 5	Paterson & Ramapo.....100	248,000	semi-an	July '82 4	Sixth Avenue (N. Y.).....100	750,000	semi-an	May '82 5
Concord and Ports.....100	350,000	semi-an	July '82 3 1/2	Pemb. & Hightst. n.....50	342,150	semi-an	Jan. '82 3	Somerville (Boston).....100	113,000	semi-an	Nov. '82 3
Conn. & Passump. Riv.....100	2,244,400	semi-an	Aug. '82 3	Pennsylvania.....100	83,786,570	semi-an	Nov. '82 4 1/2	South Boston.....50	600,000	semi-an	July '82 4
Connecticut River.....100	2,400,000	semi-an	Jan. '83 4	Pennsylvania Co.....100	20,000,000	semi-an	June '81 2 1/2	Third Avenue, N. Y.....100	2,000,000	q'arterly	Aug. '82 3
Cumberland Valley.....50	1,292,950	q'arterly	Oct. '82 2 1/2	Peoria & Bureau Val.....100	1,200,000	semi-an	Feb. '82 4	18th and 16th Sts, Ph.....50	334,529	q'arterly	Jan. '82 4
" " 1st pref.....50	241,900	semi-an	Apr. '82 4	Philadelphia & Erie.....100	7,003,700	semi-an	Jan. '75 4	23d street, N. Y.....100	600,000	semi-an	Jan. '82 4
" " 2d pref.....50	243,000	semi-an	Apr. '82 4	" " pf.....100	2,400,000	semi-an	Jan. '75 4	Union, Boston.....100	374,300	semi-an	Jan. '82 4
Danbury & Norwalk.....50	600,000	.....	Oct. '82 2 1/2	Phil. Ger. & Norristn.....50	2,321,900	q'arterly	Sept. '82 3	West Philadelphia.....50	1,005,000	semi-an	July '77 10
Dayton and Mich.....50	2,402,573	semi-an	Apr. '82 1 1/2	Phil. and Reading.....50	39,726,375	q'arterly	July '76 3 1/2				
" " pref.....50	1,121,250	semi-an	July '82 2	" " pref.....50	1,551,800	q'arterly	Jan. '83 2 1/2				
Delaware.....25	1,468,940	q'arterly	Nov. '82 1 1/2	Phila. and Trenton.....100	1,250,100	semi-an	Jan. '82 4				
Del. & Bound Brook.....25	1,652,000	q'arterly	Oct. '82 2	Phila., Wil. and Balt.....100	11,585,750	q'arterly	Oct. '82 1 1/2				
Del., Lack. & Western.....100	20,200,000	q'arterly	Jan. '82 1 1/2	Pittsb., Ft. W. & Chi.....100	10,714,285	q'arterly	Oct. '82 1 1/2				
Denver & Rio Grande.....100	29,160,000	q'arterly	Jan. '82 1 1/2	Pittsfield & Adams.....100	6,770,900	q'arterly	Oct. '82 1 1/2				
Detroit, Lans. & Nor.....100	1,825,600	semi-an	Aug. '80 2 1/2	Portl., Saco & Portsmouth.....100	450,000	semi-an	July '82 2 1/2				
" " pref.....100	2,503,380	semi-an	Oct. '82 3 1/2	Providence & Worcester.....100	1,500,000	semi-an	July '82 3				
Dubuque & Sioux C.....100	5,000,000	semi-an	Aug. '82 3	Rensselaer & Saratog.....100	7,000,000	semi-an	July '82 4				
East Pennsylvania.....50	1,709,550	semi-an	Jan. '83 3	Rhode Island & Mass.....100	100,000	.....	Jan. '81 3				
East Mahanoy.....50	392,950	semi-an	July '82 3	Richmond & Danv.....100	3,866,000	q'arterly	Aug. '82 2				
East (N. H.).....100	492,500	semi-an	Dec. '82 2 1/2	Richmond & Petersb.....100	1,009,300	semi-an	Jan. '82 3				
Eel River.....100	3,000,000	q'arterly	Dec. '82 1 1/2	Roch. & Genesee Val.....100	555,200	semi-an	July '82 3				
Elmira & Williams p.....50	500,000	semi-an	Nov. '82 1 1/2	Rutland preferred.....100	4,000,000	semi-an	Sept. '82 1				
" " pref.....50	500,000	semi-an	Nov. '81 2	St. L., Alt. & T. Haute.....100	2,300,000	.....	May '82 3				
Erie and Pittsburg.....50	1,998,400	q'arterly	June '82 1 1/2	" " pref.....100	2,468,406	.....	Aug. '82 3 1/2				
Evansville & Terre H.....100	4,500,000	semi-an	Jan. '83 3	St. L. & S. Fran. 1st pref.....100	4,500,000	.....	Aug. '82 3 1/2				
F. & P. Marquette pf.....100	6,500,000	semi-an	July '82 3	St. L., I. Mt. & South n.....100	21,459,921	semi-an	Feb. '74 3				
Ft. W. & Jackson pref.....100	2,000,000	.....	May '82 2	St. L., Jac. ville & Chic.....100	1,293,800	.....	Aug. '82 4 1/2				
Georgia.....100	4,200,000	q'arterly	July '82 2 1/2	" " pref.....100	1,034,000	.....	Aug. '82 4 1/2				



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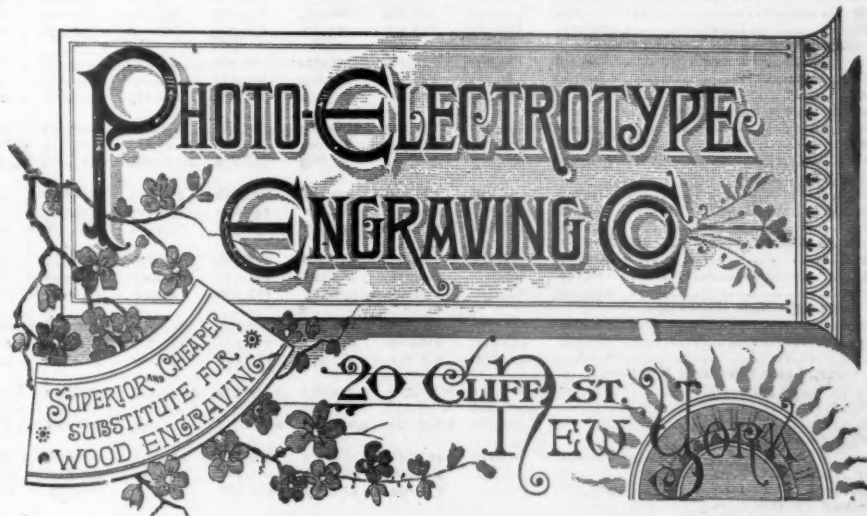


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## RAILROAD EARNINGS—MONTHLY.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
<b>BURL., CEDAR RAP. &amp; NORTHERN:</b>													
1880.....	184,316	165,170	188,395	141,659	149,504	153,378	143,432	160,160	179,804	204,991	189,330	193,419	2,053,484
1881.....	167,750	124,510	148,551	184,680	165,630	205,912	174,351	209,112	221,801	221,748	202,180	232,812	2,259,037
1882.....	252,823	225,631	224,107	178,304	199,278	211,257	198,476	224,921	261,439	300,155	278,439	.....	.....
<b>CENTRAL PACIFIC:</b>													
1880.....	1,200,615	1,070,487	1,373,438	1,356,716	1,778,488	1,724,930	1,840,067	1,973,438	1,994,997	1,120,229	2,199,466	1,905,221	20,508,113
1881.....	1,602,907	1,454,218	1,709,658	1,872,370	2,091,411	2,159,382	1,899,346	2,088,519	2,185,303	2,507,857	2,297,971	2,225,179	24,094,101
1882.....	1,839,469	1,720,675	1,969,737	2,054,687	2,342,298	2,229,103	2,020,000	2,277,000	2,474,000	2,409,000	2,242,000	.....	.....
<b>CHESAPEAKE AND OHIO:</b>													
1880.....	202,335	108,681	222,762	221,559	199,443	214,352	238,236	259,110	247,303	211,820	240,795	218,009	2,674,308
1881.....	162,540	184,389	228,479	227,343	252,235	241,135	225,066	262,858	247,144	236,306	230,622	203,562	2,702,762
1882.....	210,455	209,708	208,981	267,454	255,939	260,753	306,831	371,175	332,219	347,882	287,850	.....	.....
<b>CHICAGO AND ALTON:</b>													
1880.....	534,054	497,013	626,473	542,961	616,128	617,524	708,906	761,120	767,349	785,199	696,776	574,695	7,718,198
1881.....	487,890	461,641	529,915	558,190	548,556	635,860	676,205	769,751	771,844	774,790	672,380	635,307	7,553,988
1882.....	579,447	530,480	584,483	561,787	553,412	613,886	671,537	800,624	881,109	812,032	747,151	.....	.....
<b>CHICAGO AND NORTHWESTERN:</b>													
1880.....	1,154,632	1,131,683	1,361,725	1,294,573	1,875,688	1,671,177	1,699,686	1,767,938	2,020,245	2,105,217	1,855,622	1,477,902	19,416,007
1881.....	1,240,664	963,204	1,178,795	1,474,612	1,879,006	2,306,444	1,983,032	2,315,164	2,292,676	2,341,098	2,019,038	1,855,477	21,849,209
1882.....	1,644,935	1,474,176	1,672,931	1,668,741	2,110,947	2,022,700	2,025,736	2,099,755	2,297,053	2,532,100	2,069,287	.....	.....
<b>CHICAGO, BURLINGTON AND QUINCY:</b>													
1880.....	1,432,740	1,411,870	1,732,518	1,489,894	1,909,627	1,682,956	1,773,643	1,834,321	1,862,285	1,934,762	1,837,860	1,552,018	20,454,494
1881.....	1,307,948	1,034,821	1,418,149	1,574,371	1,679,455	2,083,803	1,888,358	2,173,945	2,262,981	2,031,001	1,816,133	1,905,490	21,324,150
1882.....	1,658,834	1,457,300	1,566,217	1,530,838	1,505,261	1,437,164	1,625,006	2,086,858	2,186,400	2,270,444	.....	.....	.....
<b>CHICAGO, MILWAUKEE AND ST. PAUL:</b>													
1880.....	764,298	738,749	900,675	871,041	1,134,745	1,037,958	1,026,708	991,297	1,257,677	1,493,620	1,472,037	1,397,308	13,086,119
1881.....	990,847	682,717	916,989	1,259,946	1,538,491	1,729,811	1,568,706	1,678,361	1,644,677	1,591,052	1,560,597	1,855,000	17,025,462
1882.....	1,435,000	1,377,000	1,561,000	1,518,000	1,620,000	1,620,000	1,465,000	1,545,000	1,950,000	2,251,000	2,072,000	.....	.....
<b>CHICAGO, ST. PAUL, MINNEAPOLIS AND OMAHA:</b>													
1880.....	193,827	173,078	259,783	259,208	232,146	218,093	236,995	251,013	300,833	342,052	342,894	312,173	3,122,097
1881.....	257,786	158,594	251,648	261,211	350,124	404,562	383,202	385,586	373,730	379,629	392,921	391,951	3,981,296
1882.....	307,498	315,100	405,779	356,558	406,420	363,109	331,480	394,555	482,997	546,671	517,595	.....	.....
<b>CINCINNATI, INDIANAPOLIS, ST. LOUIS AND CHICAGO:</b>													
1880.....	155,607	179,541	198,220	186,199	186,995	200,332	204,138	233,478	233,478	239,881	209,014	198,254	2,412,185
1881.....	182,523	171,511	191,005	183,710	191,066	192,299	177,161	229,858	228,653	221,320	194,805	192,623	2,296,916
1882.....	200,042	186,879	208,066	204,269	199,110	195,948	209,564	.....	259,379	.....	.....	.....	.....
<b>DENVER AND RIO GRANDE:</b>													
1880.....	124,759	126,922	160,883	164,882	193,925	295,455	373,132	400,133	406,583	473,318	408,562	349,196	3,478,007
1881.....	307,470	317,681	398,493	433,111	514,767	584,230	548,284	606,193	589,287	638,432	547,055	643,417	6,206,812
1882.....	491,914	412,987	535,055	559,917	614,298	537,462	495,797	574,040	595,306	630,598	512,965	.....	.....
<b>HANRIBAL AND ST. JOSEPH:</b>													
1880.....	176,079	166,965	216,061	206,735	191,317	179,396	224,312	238,081	233,448	242,214	207,147	279,635	2,561,366
1881.....	122,874	176,356	190,812	172,950	170,740	201,899	210,240	215,103	231,913	195,607	180,376	2,230,961	.....
1882.....	138,284	154,717	168,798	148,913	154,917	155,030	184,347	258,628	239,196	238,442	249,252	.....	.....
<b>ILLINOIS CENTRAL:</b>													
1880.....	595,212	613,806	613,008	535,732	665,120	681,736	724,095	732,755	806,836	826,211	783,120	673,182	8,304,812
1881.....	521,281	524,499	557,789	673,259	673,259	803,887	803,887	868,407	828,847	815,238	737,218	703,475	8,586,397
1882.....	728,173	689,387	695,371	674,603	674,749	663,746	752,251	813,600	828,238	865,325	752,144	.....	.....
<b>INDIANA, BLOOMINGTON AND WESTERN:</b>													
1880.....	80,498	89,690	116,185	90,374	85,733	106,954	103,438	116,732	110,622	121,343	95,621	104,619	1,233,079
1881.....	90,283	83,261	192,085	203,677	206,064	199,846	199,125	272,174	247,332	225,678	200,450	156,697	.....
1882.....	195,824	175,755	206,235	205,934	182,554	186,133	206,072	278,814	273,100	269,046	256,998	.....	.....
<b>LOUISVILLE AND NASHVILLE:</b>													
1880.....	674,455	575,035	612,593	563,883	655,014	976,229	772,538	827,089	931,911	1,000,327	953,087	949,185	9,491,346
1881.....	812,118	805,124	947,959	855,704	828,726	1,227,885	817,135	876,192	951,566	1,002,950	1,065,223	1,153,779	11,344,361
1882.....	964,527	960,315	1,068,834	953,603	958,130	1,215,490	1,063,705	1,043,912	1,107,985	1,216,215	1,192,390	.....	.....
<b>MOBILE AND OHIO:</b>													
1880.....	250,116	204,095	168,302	140,091	129,248	121,555	131,621	140,593	184,247	264,714	251,368	287,372	2,273,622
1881.....	224,347	216,768	230,916	153,551	154,803	137,517	135,549	160,789	210,262	252,686	262,986	258,212	2,403,224
1882.....	150,676	158,590	148,166	141,957	134,378	136,184	136,398	140,443	160,031	205,201	295,110	.....	.....
<b>NASHVILLE, CHATTANOOGA AND ST. LOUIS:</b>													
1880.....	205,634	191,154	169,457	155,466	158,839	144,130	151,594	169,326	167,473	172,221	182,087	175,966	2,049,484
1881.....	178,143	190,866	207,710	183,525	194,430	154,549	150,430	168,317	179,979	172,121	152,059	173,127	2,075,256
1882.....	156,994	159,961	161,005	154,155	135,556	119,074	160,991	168,304	168,999	180,319	.....	.....	.....
<b>NEW YORK AND NEW ENGLAND:</b>													
1880.....	164,232	149,907	183,845	179,689	183,701	219,891	205,056	249,885	235,642	215,491	210,856	198,108	2,396,302
1881.....	189,749	173,614	212,019	196,913	217,185	219,518	246,821	280,524	299,573	240,764	237,729	289,255	.....
1882.....	213,840	217,261	265,222	263,544	283,244	290,060	300,920	353,726	338,490	310,145	276,183	.....	.....
<b>NEW YORK, LAKE ERIE AND WESTERN:</b>													
1879.....	1,147,173	1,207,391	1,356,780	1,372,755	1,350,574	1,230,419	1,273,533	1,450,223	1,492,497	1,713,697	1,515,835	1,398,224	16,509,127
1880.....	1,266,381	1,252,218	1,644,958	1,643,151	1,592,544	1,661,812	1,580,976	1,606,874	1,786,417	1,799,338	1,726,788	.....	19,149,361
1881.....	1,443,437	1,425,765	1,847,261	1,709,057	1,776,891	1,794,982	1,787,081	1,772,895	1,734,200	.....	.....	.....	.....
<b>NORTHERN CENTRAL:</b>													
1880.....	334,494	330,860	415,325	386,130	329,788	419,193	450,298	453,923	464,093	512,918	459,054	494,310	5,050,387
1881.....	386,157	382,657	452,906	427,273	465,588	427,287	480,811	498,008	429,565	494,664	487,160	476,622	5,443,697
1882.....	407,368	413,551	430,194	435,129	422,607	422,762	509,683	667,488	592,435	550,225	.....	.....	.....
<b>NORTHERN PACIFIC:</b>													
1880.....	81,390	77,259	119,357	185,700	217,613	253,105	241,277	223,500	330,300	358,456	300,822	220,993	2,629,710
1881.....	116,508	78,803	162,984	216,210	312,705	412,024	393,260	434,085	534,363	583,555	475,610	434,331	4,044,576
1882.....	239,800	269,000	384,000	438,000	568,332	631,342	679,240	727,377	789,700	834,460	761,324	.....	.....
<b>PHILADELPHIA AND ERIE:</b>													
1880.....	224,307	245,372	327,678	334,947	311,470	331,024	308,669	347,532	322,737	36			



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Boiler Coverings, Millboard, Roofing, Building Felt, Liquid Paints, Etc.  
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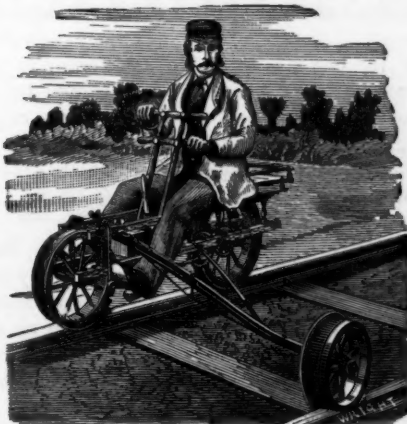
Having extensive facilities, we are now prepared to furnish promptly, of the best and most approved descriptions, either

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In use on nearly every Railroad in the Country.

Runs easily; is durable, and capable of high speed; and either as shown or when arranged for carrying two persons, constitutes the very best device for close inspection of track ever offered to the railroad public.

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No. 26 West Third Street, Cincinnati, Ohio.

Manufacturers of all Weights of Standard and Narrow Gauge Rails by the most approved process. Also Rail Fastenings, Steel and Bloom Boiler Plate, and Tank, Sheet, and Bar Iron.

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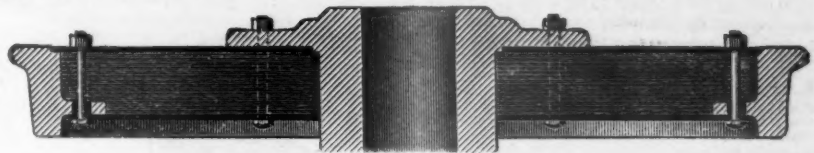
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CROSS-HEADS, ROCKER-ARMS, PISTON-HEADS, ETC., for Locomotives  
15,000 Crank Shafts and 10,000 Gear Wheels of this steel now running prove its superiority over other Steel Castings.  
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Manufacturers of Allen's Patent

## =PAPER CAR WHEELS,=(ALL SIZES).

Especially adapted for Sleeping and Drawing Room Cars, Locomotive and Tender Trucks, Steel Tire, with annular web—strongest, most durable and economical wheel in use. Works at Hudson, N. Y.; and at Pullman (near Chicago) and Morris, Ill.

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THE USE OF THE

## McLeod Automatic Air Railroad Signal

Will prevent Railroad Accidents and Save Life.

"The McLeod Air Signal is an ingenious and inexpensive device by which the coming of a train is announced far in advance, both by visible and audible signals." [Mass. R. R. Com. Report.]

This signal has been fully tested on the New York and New England Railroad at Dudley and Bird Streets, by practical operation, and has proved a complete success, to the entire satisfaction of the many prominent Railroad men and experts who have watched and examined it. It provides an Automatic Block, Crossing, Station, Switch, Bridge, Yard and Curve Signals, Gate and Revolving Lanterns. Being operated by the weight of trains passing over an incline bar, forcing common air through a tube, by means of a bellows, which is positive in its action, it is highly commended by all railroad officials who examined it.

The company can shortly fill orders to place it on any railroad, and invite communication from Railroad Officials from all parts.

**MCLEOD AIR RAILROAD SIGNAL CO.,**  
4 Pemberton Square, Boston, Mass.

New York Office with Col. Thos. R. Sharp, 115 Broadway.

### Nixon's Traction Engine.

This new engine is made for plowing, threshing, road, mining, and yard transportation. The frame is constructed of four parallel I steel sills with cross-beams at ends, and diagonal braces throughout, except at base of boiler, giving stiffness to frame, and supporting at ends the coal-tender and water-tank, thereby giving equal distribution of weight and balance on the tracks. The parallel sills are twenty-four inches apart from centers, to which are attached on the underside of sills by adjustable boxes, three axles on each side. On these axles are firmly keyed three driving-wheels of two and three inch faces, with a space of two and one-half inches apart on axles. On the front and rear axles are four wheels, the first and fourth or outer wheels are three-inch face, and are flanged with flanges on outside of wheels to prevent track from slipping off in turning. The center axles have three wheels of two-inch face. The gangs of wheels intermesh or overlap each other; the tires of center gangs work close to the hubs of the front and rear gangs. Revolving over with these gangs of wheels are two tracks of rubber or other suitable elastic material composed of an outer and inner layer, between which are transverse metallic plates, secured through layers and plates by rivets or bolts, to retain tracks in shape transversely. The front and rear gangs of wheels are driven forward or backward, or one forward and the other backward in turning, by spur gears secured to inside of wheels; front and rear gangs are connected by idle gears on center axles. The center gangs are driven in the same direction by spur gears on axles, of the same diameter as those on front and rear gangs. Motion is given by long pinion to these gears from reversing yatch engine, one on each side of upright boiler for each track.

The width of each track is eighteen inches; thickness of rubber tracks, four and one-half inches; height of wheels, four and one-half feet; length of each track in contact with the earth, sixty inches; hence  $60 \times 18 \times 2 = 2,160$  inches of effective earth contact or traction, over which is distributed the six tons of weight of engine and track. A horse of 1,000 pounds weight has forty-eight inches of effective earth contact while pulling; hence ten horses have 480 inches of traction.

The engines now on the market with two drive wheels of eight to ten inch tires, have forty-eight to seventy-two inches only of effective

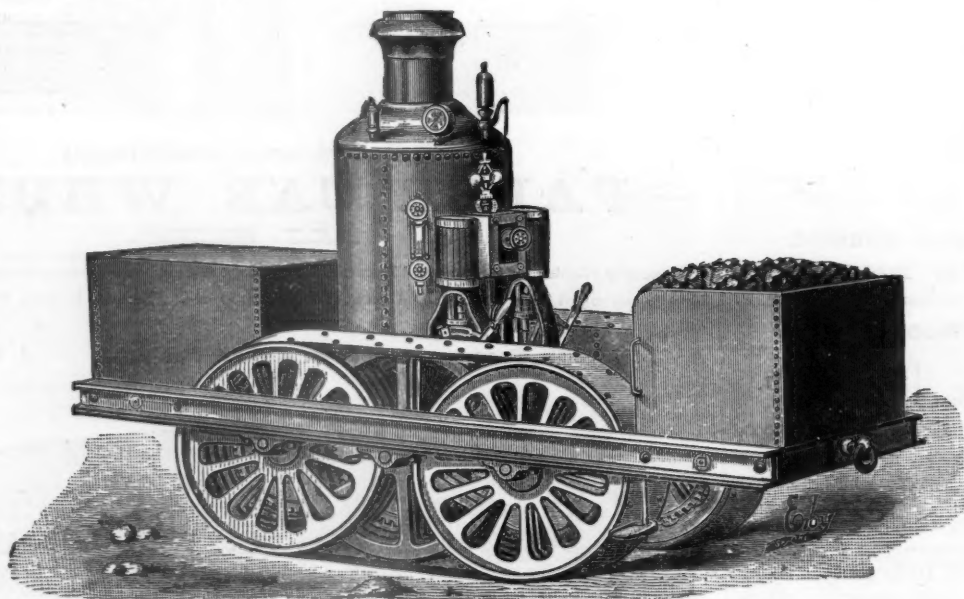
earth contact, consequently are useless for plowing, or hauling their own weight over spongy ground.

This engine's tracks have no suction or adherence when the tracks leave the ground, therefore no loss of power by carrying its tracks forward. The tracks cannot be broken by passing over an obstruction, as the rubber will give to wheels until the wheel rotates over, and then instantly return to place.

The adherence of the tracks to the periphery of the one-half of the front and rear gangs and the bottom and top of center gangs of wheels insures no slipping of wheels on the tracks when worked to its fullest capacity on steep inclines.

Patented by JACOB NIXON, of Winfield, Kansas, in the United States, August 29, and in Canada, August 31, 1882, who can be addressed for further information.

SCIENTIFIC men have lately discovered that the crab does not crawl backward. It is made going forward all the time.



NIXON'S TRACTION ENGINE.

### The Great American and European Short Line Railway.

THE charter of this company covers from the terminus of the Grand Trunk and Canadian Pacific railways at or near Montreal, through the State of Maine, passing near Frederickton, Moncton, Bari Vert, Pugwash and New Glasgow; thence over the Halifax and Cape Breton railways; thence through Cape Breton to Cape North; thence by water to New Foundland at or near Cape Ray; thence across New Foundland to a point on the east coast near Buena Vista; thence by steamer to the west of Ireland, probably Galway, reducing the ocean passage from 3,300 to 1,640 miles. From the east coast of New Foundland to Ireland, a line of fast steamers will be run, and from Galway fast express trains to London and all continental cities. At least forty-eight hours' time will be saved between New York and London, and 1,000 miles of dangerous coast travel between New York and Cape Race. This company are

now at work in New Brunswick, and at Pugwash, N. S., and are building 2,000 feet of wharves for lumber and timber, and the finest coal-shutes in Canada. They are at work on the main line, and propose to extend surveys between Moncton and Montreal next spring. They have 900 miles to build from Montreal to Cape North, of which about 180 are completed, while about 320 miles are surveyed. The title of the syndicate controlling the road is "The New York, Boston and European Short Line," and the cost of the construction will be more than \$30,000,000.

### An Experiment in Switzerland.

BEING desirous of testing the velocity of sound between two places of different heights above the sea level, two Frenchmen arranged for a small brass cannon to be fired from the top of a mountain in Switzerland (Faulhorn), and another from a little village near Lake Brienz, 6,500 feet lower than the former spot. The cannon—which were those used by the homely villagers in their festivals—were discharged twenty-eight times, and it was found that though the speed of the sound was not affected by the height, there was a very decided difference in the strength. The report from the cannon at the lake was well heard on the mountain top, while that from the latter was feeble, the strength of the sound being found to depend largely upon the density of the air at the place of its production, and not at the place

of its being heard. Thus, in order to produce a sound whose intensity should be the same at both spots, it was necessary to put eight parts of powder in the cannon on the mountain for every seven used in the charge for the gun by the lake.

BOWERS, DURÉ & Co., of Wilmington, Del., have received a contract to build twenty-four fine passenger cars for the Brooklyn Bridge. These cars will be similar to those run on the Manhattan Elevated Railway of New York, and the work of construction will be commenced shortly.

ENTERPRISING people are beginning to learn the real value of advertising the year round. The persistency of those who are not intimidated by the cry of "dull times," but keep their names ever before the public, will surely place them on the right side in the end,

HANG out your sign in the AMERICAN RAILROAD JOURNAL.



53d YEAR!!

Now Is The Time

—TO—

SEND IN YOUR

SUBSCRIPTION

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AMERICAN

RAILROAD

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FOR

1883.



### SOLE MANUFACTURERS OF IMPROVED VULCANIZED FIBRE TRACK-BOLT WASHERS,

which form non-metallic, permanently elastic compensating cushions, absorbing shocks and vibrations, and absolutely locking the nuts. These Washers have been adopted by a large number of railroads as the cheapest and best device in use. Flexible vulcanized-fibre dust guards and oil box packings, which are absolutely unaffected by oil and grease, are far more durable than leather and much cheaper.

Office and Factory, Wilmington, Del.

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ADOPTED BY  
THE  
GOVERNMENT

Prints Black, Violet, or Red, from the original writing, Autograph Fac-simile Circulars, Prices Current, Music, Drawings, School Examination Papers, etc., in a common copying press, at the rate of 500 per hour. The most rapid, simple, and economical process known 1000 to 5000 printed from a single writing. The Simmons Hardware Co., of St. Louis, says of it: "Our Papyrograph, purchased some time since, gives entire satisfaction. Would not be without it for \$1,000 a year." For specimens of work price-list, etc., address, with stamp, THE PAPYROGRAPH CO., 41 to 45 SHETUCKET STREET, NORWICH, CONN. Local Agents wanted.



THE JENKINS STANDARD PACKING is acknowledged by users as the Best in the world. Unlike all other Packings, the Jenkins Standard Packing can be made any thickness desired in a joint by placing two or as many thicknesses together as desired, and following up joint it vulcanizes in place and becomes a metal of itself (it is frequently called Jenkins Metal), and will last for years, as it does not rot or burn out. Avoid all imitations, as a good article is always subject to cheap imitations. The genuine has stamped on every sheet, "Jenkins Standard Packing," and is for sale by the Trade generally. Manufactured only by

**JENKINS BROS.,**

PROPRIETORS JENKINS PATENT VALVES, PACKING, &c.

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104 Sudbury St., Boston.

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For any responsible advertiser, making application in good faith, we prepare and furnish a written estimate, showing the cost of any proposed advertising in the leading Newspapers of the United States and Dominion of Canada.

We prepare and exhibit printed proofs of any proposed advertisements.

For the preparing of estimates no charge is made, and the applicant is placed under no obligation to transact his advertising business through us unless it appears to him that by doing so he will best advance his own interests.

A copy of the advertisement, a list of the papers, the space the advertisement is to occupy and the time it is to appear, should all be given with the application for an estimate of the cost.

When an advertiser does not know what he wants or what he ought to do, he can designate some sum of money within which he wishes to limit his expenditure; this will enable us to prepare for him such a list of papers as will be the best for his purpose, within the limits which he prescribes.

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**RUBBER CLOTHING, LACE  
LEATHER, BELT HOOKS,**

**RAILROAD, MINING, AND  
MILL SUPPLIES.**

**No. 21 Park Place,  
NEW YORK.**

## CANADIAN DEPARTMENT.

MR. JAMES J. WHITE, Ottawa, Canada, writer of "Our Canadian Letter," acts as agent for the AMERICAN RAILROAD JOURNAL COMPANY, in Canada. He is authorized to receive, in behalf of the company, subscriptions and advertisements for this journal; also news of the character which he can utilize in the preparation of his Letter, or send to us for use elsewhere within these columns. He respectfully invites information concerning Railroad matters generally, Mining, Banking, Finance and Manufactures.

## OUR CANADIAN LETTER.

[From our Special Correspondent.]

SIR HUGH ALLAN—A CANADIAN DISTRICT OF COLUMBIA—FOREIGN RELATIONS—RAILROAD AND OTHER NOTES, ETC.

SIR HUGH ALLAN.

SIR HUGH ALLAN, the eminent Canadian ship owner and capitalist, whose death is announced to have taken place in Edinburgh, Scotland, on Saturday last, was born September 29, 1810, at Salcoats, a seaport on the Frith of Clyde, Scotland. His father was captain Alexander Allan, a shipmaster and trader all his life between the Clyde and St. Lawrence. When he was sixteen years old he came to Canada with his father, who was master of the vessel, and obtained a situation in a dry goods house, but not being contented, at the expiration of three years returned to Scotland with his father's vessel. The following year he returned to Canada and obtained employment in an extensive shipping establishment. After five years' service he was taken in as junior partner. After many changes the firm became universally known as the "Allan Brothers—Hugh and Andrew Allan."

In 1851 the firm began to build iron screw steamships, and in 1853 began carrying the mails.

Messrs. Allan were the first to adopt the spar or flush deck.

The Allan fleet now ranks among the principal lines in the world, and Sir Hugh Allan ranked among the Canadian merchant princes: His Royal Highness, Prince Arthur, while in Canada in 1869, was his guest.

In recognition of his courtesies to the Prince, and in recognition of his past services to Canadian and British commerce, he was knighted by Her Majesty Queen Victoria in 1871.

Sir Hugh Allan at the time of his death was President of the Merchants Bank, Montreal Telegraph Co., etc., and connected with all the leading financial institutions of Canada. He belonged to the Scotch Presbyterian church. Sir Hugh and his family, socially, occupied the highest position in Montreal. He entertained Royalty on different occasions; among his guests were His Royal Highness, Prince Arthur, the Marquis of Lorne, Princess Louise, and the Governor General, Lord Dufferin. His family consisted of thirteen children, nine daughters and four sons. Lady Allan died in England last year.

A CANADIAN DISTRICT OF COLUMBIA.

The Ottawa City Council have decided to appoint a committee to wait on the Premier of Canada and ask him to use his influence with the government, to create a district here similar to the District of Columbia in the United

States. It is said that Sir John McDonald a few years ago expressed himself as favorable to the scheme.

## FOREIGN RELATIONS.

Sir Alexander Galt, High Commissioner of the Dominion Government in England, is receiving the assistance of the Colonial Secretary, connected with the negotiations for concluding commercial relations with France.

The Imperial Government is desirous of serving Canada's interests. Sir Alexander Galt will again visit Madrid, for the purpose of renewing negotiations with a view to extending the commercial relations of the Dominion with Cuba.

## RAILROAD AND OTHER NOTES.

It is understood in Montreal that if the Grand Trunk Railway gets a monopoly of the railway traffic between Montreal and Quebec, the steamers with emigrants will come direct to Montreal without stopping at Quebec.

## AN IMPORTANT SCHEME.

The Dominion Government will subsidize a line of steamers to run between Montreal and Bremen in summer, and in winter between Halifax and Bremen. This is done with the view to encourage German immigration to Canada. The Dominion and Local governments will also take other measures for promoting emigration, and are now making arrangements for that purpose, and the different parliaments will be asked for appropriations at the coming session.

The attention of the Government of Canada has been called to the delay in the outgoing and incoming mails by the "Allan" steamers calling at St. John, N. F.

An open Stock Exchange in Montreal is suing those who became members and did not pay their entrance fee.

Major Rogers, engineer of the Canada Pacific Railway, has arrived at Montreal from British Columbia, where he has completed a survey of the line to connect at Fort Calgary. The line will be much shorter than the old line made by the government surveyors some years ago, and the new Rocky Mountain Pass (Kicking Horse) far surpasses the Leather Head Pass. There

will be no tunnelling, and the gradient will be less than any on the American lines.

The Atlantic and Northwestern Railway Co., have re-opened their books for further subscription to capital stock, and for a further call of ten per cent.

The Canada Atlantic Railway have commenced an action against the City of Ottawa for the recovery of \$100,000 bonus granted last year.

## MARITIME PROVINCES.

The Dominion Government will place on the estimates for 1883-4, \$10,000 for a Centennial Exhibition of New Brunswick at St. John.

A new Paper Mill Co. with a capital of \$75,000 has been incorporated at Maysville, York county, N. B.

At the annual meeting of the St. John Board of Trade, held on December 4, the retiring president said: "The early completion of the Megantic Line is looked for. On it depends the chief hope for securing to us the Dominion winter port. Efforts are being made towards its completion more or less effectively, and we may reasonably expect that if the Canada Pacific line is finished, we may have the Megantic line completed and thus give to St. John the shortest through line from the Atlantic to the Pacific.

The cargo steamers of the Allan Line which sailed from Montreal during the season of the St. Lawrence navigation, took out 6,330 oxen and 5,887 sheep, landing all in good order excepting 4 oxen and 43 sheep.

## MINING MATTERS.

A number of Americans are prospecting and examining the Ottawa Valley iron and phosphate region, with the object of investing. Several Boston and New York parties are expected here during the month. Mr. Geo. H. Nichols, of Brooklyn, N. Y., has purchased a large tract of phosphate land near Buckingham; he has also contracted for 8,000 tons to be shipped to the United States, during this winter. I am credibly informed that the article on "Phosphate" that appeared in the RAILROAD JOURNAL some weeks ago has been the means of increasing the interest in that mineral in the United States, the article having been re-copied extensively. "W."

OTTAWA, December 14, 1882.

## The D. K. Miller Improved Padlock.

SUPERIOR TO EVERY OTHER

In Mechanical Construction, Security, and Durability.

MADE OF BRASS,

With Springs of the Celebrated Phosphor-Bronze,

And Warranted to Stand in Every Climate.

UNPICKABLE, NO RUSTING OR CORRODING.



Shown by general use to be the BEST Padlock in the Market for Railway Cars, Switches Tool Boxes, and for all other purposes for which padlocks are used.

Every Padlock with a different Key and Master Key to unlock them all; or all Padlocks with same key if required.

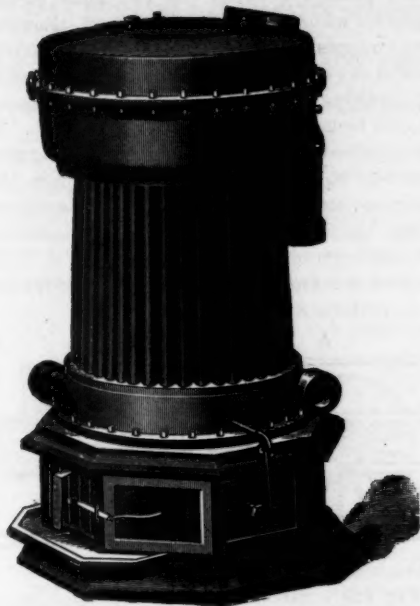
Send for Circulars with Details and Prices.

**FAIRBANKS & COMPANY, Agents,**

Philadelphia, Baltimore, New Orleans, NEW YORK, Buffalo, Pittsburgh, Albany



# THE SALMON CAR HEATER



"36 per cent of coal saved and the car kept noticeably warmer!"

by using **THE SALMON CAR HEATER**.  
It Insures Safety from Fire in case of Accident,  
Economy in Fuel and **RAPID CIRCULATION**. It heats quickly, is **SELF-REGULATING**, and can be used for  
either **STEAM OR HOT WATER**.

The Water Tubes do not come in contact with the Coals, but occupy the Smoke Flue in such a manner as to absorb the greatest amount of heat from Coal in a low state of combustion without danger of chilling the fire.

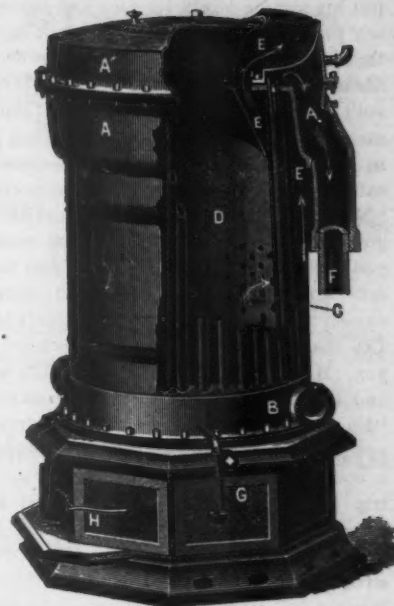
Once filled with coal the fire will last from 24 to 60 hours, according to weather, without replenishing, as proved by actual test.

At the last "Mechanics' Fair" it received the Silver Medal, being the highest award to heaters of any kind.

**CORRESPONDENCE SOLICITED.**

**The Salmon Heater Co.**

OFFICE, 35 CONGRESS STREET, BOSTON, MASS.



Established 1863.  
**MOLLER & SCHUMANN**  
Manufacturers of Fine  
**COACH AND CAR VARNISHES.**  
BROOKLYN, N. Y. U. S. A.



**STEEL CAR PUSHER**  
MADE ENTIRELY OF STEEL.  
ONE MAN with it can easily move a loaded car.  
Manufactured by E. P. DWIGHT,  
DEALER IN RAILROAD SUPPLIES,  
407 LIBRARY ST.,  
PHILADELPHIA.

ESTABLISHED IN 1836.

**LOBDELL CAR WHEEL COMPANY,**  
Wilmington, Delaware.

GEORGE G. LOBDELL, President.  
WILLIAM W. LOBDELL, Secretary.  
P. N. BRENNAN, Treasurer.

First-Class English  
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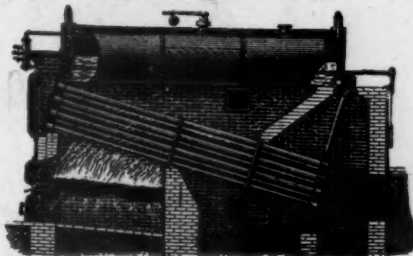
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## In His Own Coin.

"Is this seat engaged?" he asked of the prettiest girl in the car, and, finding it wasn't, he put his sample-box in the rack and braced himself for solid enjoyment. "Pleasant day," said the girl, coming for him before he could get his tongue unknicked. "Most bewildering day, isn't it?" "Ye-yes, miss," stammered the drummer. He wasn't in the habit of playing pitcher in this kind of a match, and the position of catcher didn't fit him as tight as his pantaloons. "Nice weather for traveling," continued the girl; "much nicer than when it was cold. Are you perfectly comfortable?" "Oh, yes; thanks!" murmured the drummer. "Glad of it," resumed the girl cheerfully. "You don't look so. Let me put my shawl under your head, won't you. Hadn't you rather sit next to the window and have me describe the landscape to you?" "No, please," he muttered; "I—I'm doing well enough." "Can't I buy you some peanuts, or a book? Let me do something to make the trip happy! Suppose I slip my arm around your waist. Just lean forward a trifle so I can!" "You'll—you'll have to excuse me!" gasped the wretched drummer; "I—I don't think you really mean it!" "You look so tired," she pleaded; "wouldn't you like to rest your head on my shoulder? No one will notice. Just lay your head right down, and I'll tell you stories." "No—no, thanks! I won't to-day! I'm very comfortable, thank you!" and the poor drummer looked around helplessly. "Your scarf-pin is coming out. Let me fix it. There!" and she arrayed deftly; "at the next station I'll get you a cup of tea, and when we arrive at our destination you'll let me call on you?" and she smiled an anxious prayer right up into his pallid countenance. "I think I'll go away and smoke," said the drummer, and, hauling down his grip-sack, he made for the door, knee deep in the grins showered around by his fellow passengers. "Strange!" murmured the girl to the lady in front of her. "I only did with him what he was making ready to do with me, and, big and strong as he is, he couldn't stand it. I really think women have stronger stomachs than men, and, besides that, there isn't any smoking-car for them to fly to for refuge. I don't understand this thing." But she settled back contentedly all the same; and at a convention of drummers held in the smoker that morning, it was unanimously resolved that her seat was engaged, so far as they were concerned, for the balance of the season.

A SKIPPER who plied between Boston and Nantucket had in his cabin a flower pot filled with earth from Nantucket. He boasted he could tell where he was always by tasting the bottom of the lead. Well, one night he bowed up his jib pretty well, and a passenger put the bottom of the lead into the flower pot, and after pretending to heave it handed it to the captain. The captain tasted it as usual, and then ran wildly up the companionway on deck, exclaiming, "let go the anchor, Nantucket's sunk, and here we are right over my old woman's garden!"

From Jan. 1, 1883, all persons employed on Swedish railroads and ships will be tested as to color blindness.

## Leonard's Reverse-Valve for Engines.

LEONARD'S reversing-valve (patented Sept. 5, 1882) consists of a valve placed between the ordinary slide or other valve in the steam-chest and the cylinder. The reversing-valve has five ports passing through it, two for forward and two for backward movements of engine, one, the fifth port, as a balance port, which will be more fully described. The reverse-valve is a cylinder in form and is capable of being moved or turned to change the course of steam.

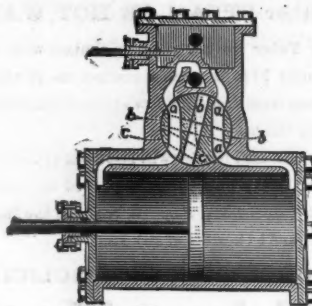


Fig. 1.

Referring to the engravings, Fig. 1 is a section showing the valve in a position here described as the forward movement of engine or locomotive. It will be seen that the ports *a a* in Fig. 1 are in a position which conducts the steam to that end of the cylinder which corresponds to the end of the steam-chest from which it enters.

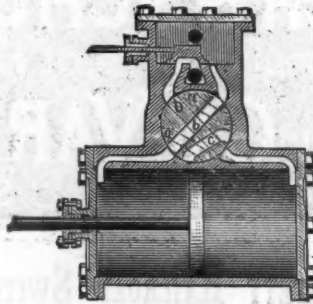


Fig. 2.

Fig. 2 is a section showing the valve in a reverse position to Fig. 1, described here as the backward movement. The ports *b b* are in position while the ports *a a* are out of position. When the valve is in this position it conducts the steam to that part of the cylinder opposite the end of the steam-chest from which it enters, thus reversing the action or movement of the engine (it is immaterial which of these two positions of the valve in Figs. 1 and 2 is used for forward or backward movements).

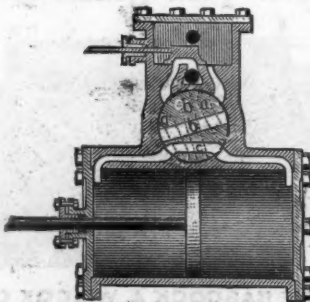


Fig. 3.

Fig. 3 is a section showing the port *c* in position while the ports *a a* and *b b* are out of

position. When the valve is in this position the reverse lever in the cab of the engine is hooked in the center, thereby allowing a complete passage between the two ends of the cylinder while the steam is cut off, allowing the contents of the cylinder to pass from one end of the cylinder to the other, and prevents the drawing in of cinders or other extraneous matter from the smoke-box or elsewhere. It will also be noticed that when the valve is in this position the steam is fully cut off from the cylinder, and therefore this valve is adapted to serve temporarily as a throttle-valve, should the latter get out of order or should it, from any other reason, be desirable or necessary for it to perform such service.

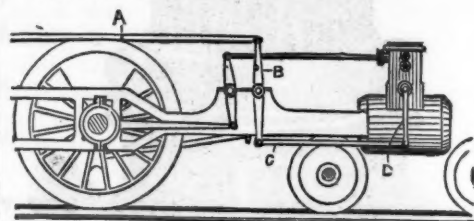


Fig. 4.

Fig. 4 is a skeleton view of a portion of a locomotive, looking from the center or inside outwards, showing the rods A and C, rock-beam B, and arm D.

Leonard's reverse-valve is managed by the engineer the same as the link, by means of the reverse-lever located in the cab. The rod A is attached to this lever in the cab, and the other end of the rod to the rock-beam B. To the opposite end of the rock-beam is attached another rod, C, which is attached to the arm D, which operates or causes the valve to rotate into any one of the three positions as shown in Figs. 1, 2 and 3. The rod A, attached to the lever in the cab, can be applied direct to the reverse-valve arm D by placing the arm D in a vertical instead of a swinging position, thereby dispensing with the rock-beam B.

The advantage this reverse-valve has over the reversing link and other devices of like character and purpose is, that the construction is less complicated; therefore the cost in constructing is much less than other reverse devices, the cost being but little more than it is to construct a portable or stationary engine (where the motion is but one way). It will be seen by examining Fig. 4 that only one eccentric is used, which is attached to the rock-beam which operates the cut-off or slide-valve, thus doing with but one eccentric to each engine or cylinder, dispensing with the link and other expensive reversing devices, thereby saving a great amount of lost motion and expensive machinery, as is used in all other devices for reversing.

This reverse valve can be applied to a locomotive (as is shown in Fig. 4), traction, or road engine, and other engines where the motion is to be reversed. It is less liable to get out of order than any other reverse device. It will be easily seen by any one who is versed in the different kinds of reverse devices that this reverse-valve is not complicated, there being fewer pieces and connections. Therefore it is less liable to get out of order and is much more easily manufactured. It will also be seen that this reverse-valve can be reversed much easier than any other device, as it can be reversed under full pressure of steam.

Further information can be had by addressing the inventor, CHARLES N. LEONARD, Rooms 16 and 18, Hubbard Block, Indianapolis, Ind.



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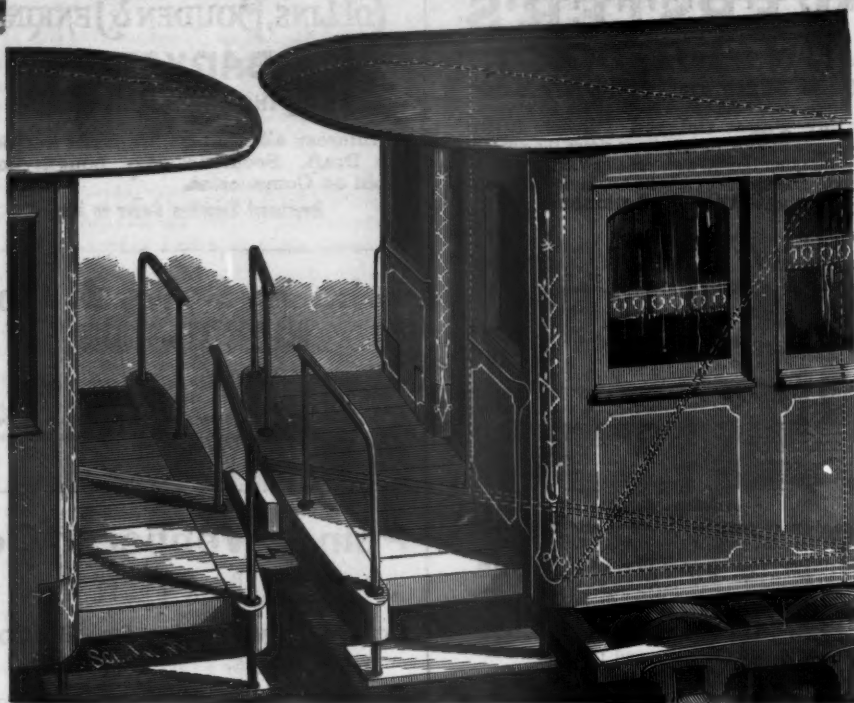
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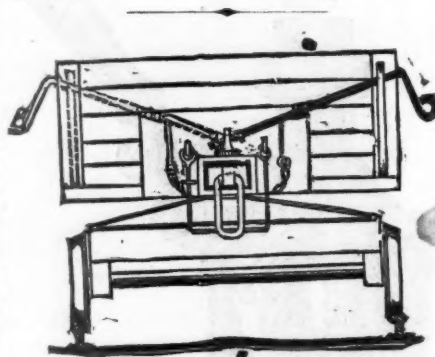
THE accompanying illustration represents an improvement in railway passenger cars, and is intended to secure to travelers safety from the frightful consequences of the telescoping and often burning of the cars in cases of severe collisions.

The improvement consists in framing the cars with one independent corner at each end, and on opposite sides attached to the main frame-work by a diagonal line passing from the end of the bolster to the end of the platform near the coupling, but not interfering with the middle bottom timbers to which the coupling is attached.

These diagonal lines bear such relation to each other on two adjacent cars in a train that when driven together violently, as in a collision, the tendency of the cars would be to pass each other instead of crushing; and to insure this effect, the permanent or rigid corners of the cars are built of unusual strength, especially at the frame work of the door-way, which is on the stronger side, heavily braced with iron stays concealed in the casing. The independent corners are attached by light frame-work sufficiently strong for all ordinary purposes or use, but so far weaker than the opposing part of the next car, that in the event of a collision, such as would otherwise telescope or crush the car, they would be broken or torn off and the cars diverted by reason of the angle at which the heavy timbers of the car come in contact with each other. This will be readily understood by reference to the dotted lines shown in the engraving. The stoves or heaters are situated in the stronger corners, and the closets in the weaker. It will be seen that this improvement adds but a trifle to the cost of building a car; that it sacrifices nothing essential to its strength, convenience or appearance, and that it insures the strongest probability of safety from the dangers against which it is intended to provide.

The changes in construction will not be apparent in any completed coach, as they refer only to the heavy frame-work, except so far as the connecting line between the independent corner and the main upright timbers can be followed by a joint at which the parts would sever in case of collision.

Further information may be obtained by addressing the patentee, JOHN MILTON, at Hamilton, Va.



Swinford's Car-Coupling.

INFORMATION received as to the car-coupling invented by Mr. W. H. SWINFORD, Cherokee, Ala., enables us to state that it is easily attached to the cars, and does not require any change in the old style draw-head, link and pin, the new car-coupling being simply attached to the old style coupling-pin. It is made of wrought iron, and the cost of production need not be more than two dollars each coupling. The use of the Swinford coupling on the M. and C. R. R. and the M. and T. R. R. has proved highly satisfactory, and its employment by connecting lines is considered probable.

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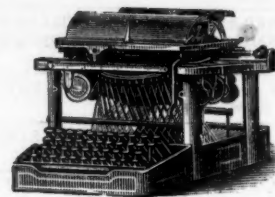
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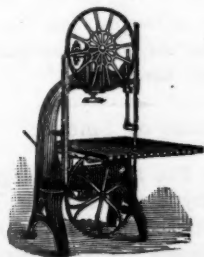
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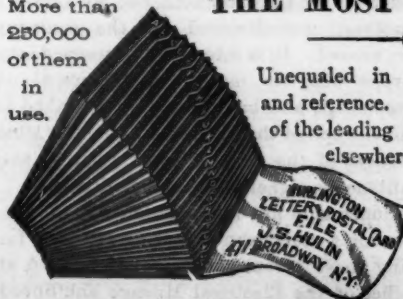
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## List of Patents for Inventions Relating to Railways, Manufacturing, Mining, Machinery, Etc.

BEARING DATE OF DECEMBER 12, 1882.

- 268,775. Railway Wood and Coal Loader: George B. Allen, Little Rock, Ark. Filed July 19, 1882.  
 268,789. Car-Coupling: Joseph Geddes, Rochester, N. Y. Filed Oct. 27, 1882.  
 268,796. Telegraph for Railroads: William L. Hunt, Port Hope, Ontario, Canada. Filed Oct. 3, 1882.  
 268,807. Coupling for shafts: Frank F. Landis, Waynesborough, Pa. Filed Sept. 13, 1882.  
 268,808. Traction-Engine: Frank F. Landis, Waynesborough, Pa. Filed June 27, 1882.  
 268,815. Cylinder Cook for Steam-Engines: Erich E. Mueller, St. Louis, Mo. Filed Oct. 13, 1882.  
 268,816. Rotary Differential Force-Pump: Peter Munzinger, Philadelphia, Pa. Filed Jan. 23, 1882.  
 268,823. Car-Coupling: Alfred E. Poland, Minneapolis, Minn. Filed July 3, 1882.  
 268,825. Rolling-Mill: Jacob Reese, Pittsburgh, Pa. Filed May 22, 1882.  
 268,829. Car-Coupling: William J. Ross, Memphis, Tenn. Filed Oct. 27, 1882.  
 268,832. Pump: William Sellers, Philadelphia, Pa. Filed Feb. 27, 1882.  
 268,834. Car-Label Holder: Coroden J. Slaughter, Grand Junction, Mich. Filed Feb. 10, 1882.  
 268,859. Gate for Car-Platforms: Arthur V. Briesen, New York, N. Y. Filed May 1, 1882.  
 268,868. Draw-Bar Spring: John F. Collins, New York, N. Y. Filed Sept. 9, 1882.  
 268,889. Furnace-Door: Harris Higgins, Chicago, Ill. Filed Oct. 13, 1882.  
 268,905. Car-Coupling: Franklin W. Kelly, Vermontville, Mich., assignor to himself and Elvin U. Stiles, same place. Filed April 24, 1882.  
 268,906. Drill-Best for Lathes: John P. Kelly, Saco, and Lewis P. Sherman, Biddeford, Me. Filed June 27, 1882.  
 268,916. Railroad-Signal: Gustave Macquart, Red Bluff, Cal. Filed Jan. 5, 1882. Renewed Nov. 16, 1882.  
 268,923. Steam-Boiler: George Miles, Wellesley Hills, Mass. Filed May 4, 1882.  
 268,928. Rail-Coupling and Bed-Plate: John Ney, Sheridan, Cal. Filed June 12, 1882.  
 269,944. Miner's Lamp: James Sawyer, Freeburg, Ill., assignor of one-half to Washington de Boit, St. Louis, Mo. Filed Sept. 11, 1882.  
 268,957. Derrick: Fredrick C. Starke and Peter J. Crowley, Milwaukee, Wis. Filed Oct. 11, 1882.  
 268,967. Cash-Railway: George Willett, Eaglewood, Ill., assignor of one-half to George Middendorf, same place. Filed June 26, 1882.  
 268,977. Dredging-Machine: Horace B. Angell, San Francisco, assignor of one-half to Thomas H. Williams, Oakland, and David Bixler, San Francisco, Cal. Filed June 19, 1882.  
 268,978. Tap-Wrench: Frank Armstrong, Bridgeport, Conn. Filed Oct. 3, 1882.

268,983. Railroad-Signal: David C. Baughman, Albion, Ind. Filed Feb. 15, 1882.

268,998. Car-Brake: Edwin H. Brown, Washington, D. C. Filed April 25, 1882.

269,012. Fluid-Pressure Railway Brake-Mechanism: John W. Cloud, Altoona, Pa. Filed Oct. 25, 1882.

269,016. Railway-Switch: Charles Lee Cooke, Syracuse, N. Y. Filed June 3, 1882.

269,037. Escape-Door for Railway Cars: Thomas E. Flint, Middlebury, Va. Filed Sept. 23, 1882.

269,041. Marine Steam-Boiler: Ferdinand Funke, Evansville, Ind. Filed August 18, 1882.

269,042. Valve-Gear for Steam-Engines: Charles M. Giddings, Massillon, Ohio. Filed Oct. 26, 1882.

269,043. Car-Couplings: Ezra N. Gifford, Cleveland, Ohio. Filed Nov. 7, 1882.

269,048. Railway-Switch: Martin A. Green, Altoona, Pa. Filed July 17, 1882.

269,065. Head-Light for Locomotives: John Kirby, Jr., Ludlow, Ky., assignor to Post & Co., Cincinnati, Ohio. Filed July 13, 1882.

269,084. Railway-Gate: Judson O. McCutchan, Middlebrook, Va. Filed July 27, 1882.

269,092. Electric Locomotive: Eusebius J. McIera, San Francisco, Cal., assignor of one-half to John C. Cebrian, same place. Filed Nov. 4, 1880.

269,103. Car-Brake: Harmon P. Notbohm, Janesville, assignor to Caleb N. Harrison, Milwaukee, Wis. Filed August 31, 1882.

269,106. Car-Coupling: John G. Peace and Eben B. Sankey, Salem, Mo. Filed August 28, 1882.

269,111. Globe-Valve: George Reimann, Quincy, Ill. Filed May 4, 1882.

269,114. Steam-Boiler: Garrie H. Rheutan, Hartford, Conn. Filed June 6, 1882.

269,142. Automatic Car-Brake: Charles Van Dusen, New Albany, Ind., assignor of one-half to William L. Breyfogle, Louisville, Ky. Filed Sept. 15, 1882.

268,146. Gas-Engine: Hermann Wiedling, Baltimore, Md. Filed April 13, 1882.

269,148. Valve for Engines: William Wise, Bay City, Mich. Filed August 12, 1882.

269,161. Street-Car Attachment: Conrad de Staebler, St. Louis, Mo., assignor of one-third to Benjamin R. Bonner, same place. Filed May 31, 1882.

269,163. Gas-Engine: Karl Teichmann, Stuttgart, Wurttemberg, Germany. Filed August 14, 1882.

## Electrical Distance and Speed Indicator.

THEIR having been thoroughly tested on the Michigan Central Railroad with most satisfactory results, is good reason why space should be given to an account of the Electrical Mileage and Speed Indicators, manufactured by the Electrical Mileage and Speed Indicator Company, of Detroit, Mich., under patents owned by Mr. E. R. E. COWELL, of the same city.

The Mileage Indicator takes its motion from a magnet connected with the revolving axle by a simple cast-iron commutator and wires. As 480 revolutions of the forty-two-wheel, and 610 of the thirty-three-wheel make a mile, an exact measurement is made easily. The device is very simple but effective. Tested over a ten thousand mile run, not one mile was lost.

An Electric Signal, coupled automatically throughout the train, is another of Mr. Cowell's inventions, manufactured by the company above named. It is intended to supersede the bell-rope with its many imperfections and shortcomings, and has been aptly described as "the bell-rope of the future." No matter what the length of the train, it gives a perfect and instantaneous signal to the engine-driver.

Arrangements are in operation for the formation of a stock manufacturing company for making these inventions. Books are open at the office of the Electrical Mileage and Speed

Indicator Company, Detroit, Mich., in which city it is proposed to conduct the manufacture of these valuable railroad appliances. The Company invite inquiries, which are answered promptly.

## Jacob's Car-Coupling.

LETTERS patent No. 267,210 have been granted IRVIN M. JACOBS, East Greenville, Montgomery county, Penn., for his improvements in automatic car-coupling. These consist of the combination, with an arrow-shaped draw-head, pivoted at the outer end of a draw-bar, of flat springs fixed on opposite sides of the draw-head and bearing with their free ends against the sides of the draw-bar. Detailed information is sent to applicants by the patentee.

Mr. Jacobs's invention admits the use of the pin and link system. It is described as certain in its action, insuring absolute safety in coupling and uncoupling cars of either class. The cost of the coupling is but little more than that of any first-class pin and link coupling now in use. Free in itself from the inconveniences of the pin and link system, especially that occasioned by the loss of parts, it couples with the pin and link coupling, when so required. Further information furnished on application to I. M. Jacobs, East Greenville, Montgomery co., Pa.

## The Miller Padlock.

THIS padlock is for sale by FAIRBANKS & Co., No. 311 Broadway, New York City. It is made of brass, with springs of phosphor bronze. The keys are small and flat, and the lock being entirely of brass. They are not injured by rust or weather. Padlocks after the Miller construction have been used for several years as switch and car locks, it is claimed, with entire satisfaction. They are used by the revenue department and the express companies because of the security afforded by them. No two of these locks will pass the same key, unless made so to order, and owners must register them in order to be able to replace lost keys, which cannot be done unless this has been effected. Railroad and other large users have their names cast upon the lock cases.

## Value of Smoke.

A COMPANY at Elk Rapids, Michigan, which manufactures fifty tons of charcoal iron a day, formerly allowed the smoke made in burning the coal to go to waste. Now the smoke as it is formed is delivered into stills charged with lime and surrounded by cold water, the result of the condensation being, first, acetate of lime; second, alcohol; third, tar; the fourth part produces gas, which is consumed under the boilers. A thousand cords of wood are converted into charcoal daily, yielding 2,800,000 cubic feet of smoke; from which are obtained 12,000 pounds of acetate of lime, 200 gallons of alcohol, and 25 pounds of tar. The alcohol has been contracted to a firm in Buffalo, N. Y., for five years, they furnished the packages and receiving it at the works at eighty cents per gallon.